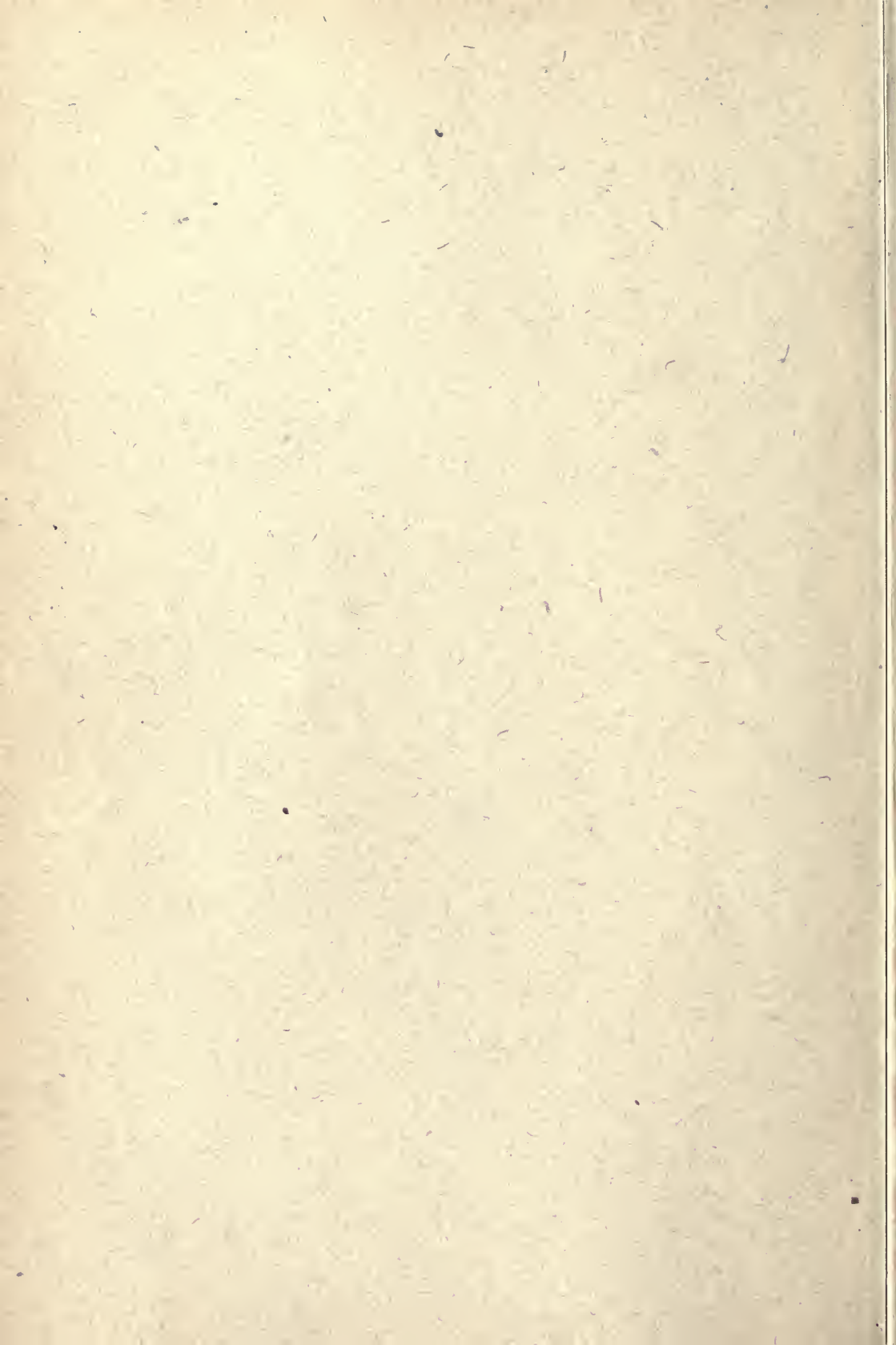


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The American City

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Editorial Comment

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An Ideal Worth Striving For

"I picture in my mind a city in which the child, yet unborn, will feel in its being the stimulus of sunshine and fresh air; in which the babe will be born into a house fit to receive the gift of heaven; in which the child will never know the burden of the slum, but through normal development will come to manhood ready joyfully to do his share in the work of the world and qualified to assume a worthy citizenship."

Such was the ideal held before the Second National Housing Conference, at Philadelphia, last month, by one of its foremost speakers. Had this gathering of several hundred men and women done nothing more than inspire its members to deeper thought and more active work towards making this aspiration a reality in their respective communities, the conference would have justified the time, money and effort which it cost. But, aside from this inspiration of personal contact, the papers and discussions at the conference did much to emphasize existing knowledge and bring forward new ideas of importance to the cause of housing reform.

The abstracts published in this issue are an attempt to summarize the principal papers read at Philadelphia, in so far as the space limits of THE AMERICAN CITY will permit. They will prove of interest and value, we believe, to the many thousands of our readers who were unable to attend the meeting last month.

But while recognizing the work of the conference as contributing much that should aid the cause of better housing, we regret that space was not found on the program for papers and discussions on more of the really fundamental questions relating

to this most perplexing of municipal problems. To be sure, the subject of city planning and its allied problem of transportation were treated in two excellent papers and received some thoughtful discussion. But there were those present who had hoped for more consideration by the conference to such questions as the following:

Do present methods of raising municipal revenue promote or retard proper housing for the laboring classes?

How can the construction and ownership of individual homes be promoted most efficiently through local building and loan associations?

Do modern building and housing codes, while aiding sanitation and fire protection, result also in higher rents and increased overcrowding? If so, how far should our cities go in such restrictions?

How would the strict regulation of building heights and lot areas in cities affect land values, rents and the transportation problem?

How may more adequate provision be made for play spaces for the children in congested districts?

If the National Housing Association will devote its next annual meeting to the thorough discussion of questions such as these, it will do a service of even greater importance, we believe, than any it has yet rendered to the cause of housing reform.

† †

A Champion of Public Ownership

Under the editorship of Livy S. Richard—already widely known as editor of the *Boston Common*—a hitherto unoccupied field of public service appears to be opening up before the *Twentieth Century Magazine*.

We have not had in the United States a magazine of national circulation having as its primary aim the promotion of the public ownership of public utilities. Such a magazine, if wisely edited, has an opportunity for great usefulness.

In his statement of policy in the November number, the new editor says that, because of the farming out of public utilities to private exploiters, "billions of dollars of the people's money which might be used to lighten the burden of high prices and low wages and to distribute comfort, have been drained into the pockets of promoters and speculators."

To many this statement will have a very radical sound; but—with proper emphasis on its use of the word *might*—its truth, we imagine, will hardly be denied. That the *Twentieth Century Magazine* appreciates that the "way to public ownership," in which it aims to guide its readers, is a path beset with difficulties on both sides, is evident from an editorial entitled "Going It Blindly," in the December number. In this comment Mr. Richard points out some of the problems which must be solved before we shall be ready for the public ownership of transportation systems, and adds:

"We do not doubt the ability of our people to work these problems out if they can once be led to appreciate their importance and the urgency of fixing constructive intelligence upon them. What we wish to point out now is that, with the emergency drawing nigh, few are giving to it the heed which it requires. Democracy, to be efficient, must be informed. The *Twentieth Century Magazine* would like to be a medium for conveying practical counsel upon these points. It invites matured counsel and constructive suggestions."

We hope that such counsel and suggestions—and financial support as well—will be forthcoming for our Boston contemporary in generous measure, and in the public interest.

* *

A Survey of School Social Centers

"A community may be said to have a schoolhouse social center if one of its school buildings is thrown open to the public on one or more fixed nights a week for at least twelve weeks a year, for activities of a social, recreational, or civic character regularly directed by one or more trained leaders."

This tentative definition of a social center is offered for comment and criticism by the

Russell Sage Foundation. It is embodied in a "Survey of School Social Centres," prepared by Clarence Arthur Perry, and soon to be published by the Foundation's Division of Recreation.

To gather data for this report, a questionnaire on social centers was sent in June last to 774 superintendents of schools. Altogether 337 replies were received, and of these 101 reported at least some schoolhouses which are locally known as recreation or social centers. The information contained in these affirmative replies is summarized by Mr. Perry as follows:

Forty-four cities reported centers at which there were paid workers. (Two years ago we could find only fifteen cities in this class.)

In nineteen of these at least some of the workers are paid by the board of education.

Fifty-seven other cities reported schoolhouses which were locally known as social or recreation centers, though they were conducted entirely by volunteer workers.

In eighty-four of the one hundred and one cities reporting centers, the heat and light are furnished by the school board.

In seventy-two the heat, light and janitor service are provided by the board.

In fifteen the board bears the total expense.

Total amount of money reported as expended both by school boards and voluntary agencies in the maintenance of school centers, \$139,535.73.

Total number of schools used as centers in the 101 cities, 338.

Number of cities reporting branch libraries in public schools, 100.

The report when published will contain a tabulation of the detailed information from the 44 cities having paid workers. It will also embody a list of cities reporting branches of the public library in the public schools, an outline of the civic aspects of recent social center development, and a summary of recent state legislation affecting the social and civic use of school buildings.

As to the proposed definition of a social center, THE AMERICAN CITY would suggest that instead of the words "regularly directed by one or more trained leaders" there be substituted the phrase "under adequate supervision." The definition thus amended would permit the application of the term "social center" to schoolhouse activities under volunteer leadership in many communities unable or unwilling to employ trained leaders for such work. Lack of technical training or of remuneration does not necessarily imply inefficiency in social center work.

ENGINEERING IN CITY PLANNING

EDITOR'S NOTE.—*The great part played by engineering in city planning is not fully appreciated, except by those who have had direct experience in such undertakings. Among the primarily engineering features of city planning are water works, transportation systems, waterways and harbors, highway engineering, street lighting, sewage and refuse disposal, gas and electric supply, police and fire alarm systems, etc.*

The laying out of the streets, squares and parks, and their embellishment by architectural or landscape treatment, though important, are only the beginnings of city planning. The installation of the necessary utilities and their efficient operation and maintenance are of fundamental importance.

The series of articles, of which this is the first, is intended to embody, in condensed form, some of the leading engineering features of city planning of interest to the readers of THE AMERICAN CITY. The author has had considerable experience with municipal undertakings abroad, and gives special emphasis to lessons which American cities may learn from European practice.

I

Water Supply and Civic Fountains*

By Frank Koester
Consulting Civic Engineer

AMONG the fundamental functions of a municipality there is none of greater importance than that of water supply. However beautiful and attractive a city may be made, if it runs a befouled and death-dealing fluid through its water mains it is but a whited sepulchre and a mockery. Murder by wholesale is the result, and a list of victims which would fill many volumes could be compiled of those who have died from diseases arising out of the negligence of the cities in which they were compelled to live; if, indeed, the supplying of diluted filth instead of water may be termed merely negligence.

No city without a water-purifying system, unless it has a source of naturally pure water, can in reality be considered a civilized place of residence. An evidence of the fear in which the water of many cities is held is shown by the numerous and highly prosperous so-called spring water companies. The amount of money spent by in-

dividual citizens in certain communities for such water would undoubtedly suffice for a purification plant for the whole water supply of the city.

The essentials of a pure water supply are properly patrolled catchment areas to collect the precipitation, an impounding storage basin, a filtering plant, and, if the supply is not by gravity to the consumer, a pumping station, and finally the distributing system. For some cities, artesian wells may take the place of catchment areas.

The water at no time should be subject to contamination, especially after being filtered. Where open reservoirs are used, they should be so protected that no possible access can be had to them except by the officials and employees. Provision should be made so that dead bodies will not find lodgment in them, as frequently occurs in many cities.

Methods of Water Purification

The purification of water is accomplished by a number of different processes, adapted

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to the different kinds of water to be treated. Such processes may be briefly described as follows:

Mechanical separation is accomplished either by gravity, in the process of sedimentation, or by adhesion and screening, as with scrubbers, filters and screens. This method is the one most widely used in the United States.

Sand filtration, as compared with the so-called mechanical filtration, is a natural gravity filtration method, slower in action and subject to certain limitations; that is, a greater area for purification is necessary, and it is not successful in clearing turbid river waters of the finely divided clay contents. It is, however, the second most widely used method in the United States and is in Europe proportionately more widely used.

Chemical purification, accompanied by the introduction of compounds of lime, etc., is necessary to soften water of a certain character and to remove iron and objectionable acids.

Biological processes accomplish the oxidation of organic matter by using it as food for certain organisms. The death of these organisms is then brought about by discontinuing their food supply and by introducing antagonistic organisms, and the remains are removed by the filtration process.

Aeration brings about the evaporation of gases held in solution, which cause objectionable tastes and odors; it also effects the evaporation of carbonic acid, a food supply for some kinds of growth, and supplies the oxygen needed for certain chemical purifications, and especially for the growth of water-purifying organisms. Aeration is accomplished by exposing the water in thin sheets to the air, as in falling over dams or overflows, and by pumping it up into the air out of a pipe, as in the form of a low or bubbling geyser.

American cities for the most part draw their water supply from rivers which carry a large proportion of silt and clay. It is therefore necessary to remove such impurities, which are of a purely inorganic kind, as well as to purify the water of bacteria and other organic growth. Various methods and combinations of methods are employed for the purpose. In some plants the process consists of prefiltration, coagulation and final sandbed filtration; in others, coagulation and mechanical filtration; while

in others sterilization is employed in addition to the other methods.

In Wilmington, Albany, Philadelphia, Montreal, Steelton and other places preliminary filters are employed, after which sedimentation is allowed to take place, with a final sandbed filtration. This process in time of heavy floods does not work well, as the suspended matter in the water cannot be adequately dealt with.

Coagulants such as sulphate of alumina, or sulphate of iron in connection with lime, effect a coagulation of the particles to a point of sufficient individual bulk to be removable by the sandbed filtration. This method is improved by being used in connection with the sterilization process, as in the application of hypochlorite of lime.

The most efficient method of dealing with American river waters with a high degree of turbidity is that followed by such plants as those at Louisville, Harrisburg, New Orleans, Columbus, Toledo, Cincinnati, Little Falls, New Milford and several hundred smaller places, in which the water is first subjected to coagulation and then mechanically filtered by being forced through filtering mediums under pressure, the filtering medium when clogged being cleaned by reversed currents.

The coagulants have in addition the effect of removing discolorants, tastes and odors, and they are especially effective in these respects when used in combination with aeration. It is, of course, necessary to have the operation of such plants in the hands of competent and experienced engineers, and each installation must be treated on its own merits, as the local conditions vary so greatly.

Ozone Treatment in St. Petersburg

Another process coming rapidly into use is the ozone treatment. It is an electrical treatment of the water, which produces the effect of aeration in a much more rapid manner than by oxygen. It is much employed on the Continent, and an especially notable plant has recently been installed in St. Petersburg, where the capacity is 50,000 cubic meters per 24-hour day, or 13,200,000 gallons.

The water of St. Petersburg is taken from the River Neva, which not only has a very decided brownish yellow color, but which is also heavily charged with the germs of typhoid and cholera. It has un-



ORNAMENTAL WATER TOWER AND FOUNTAINS, FRIEDRICHSPLATZ, MANNHEIM



FOUNTAIN AT NEW SANITARIUM, WIESBADEN

doubtedly been the cause of epidemics in the past. The plant consists of coagulating filter basins, electric generating ozone producers and ozone sterilizing apparatus. The coagulating basins are designed of such capacity that the water remains in them for a period of two hours, after receiving the required amount of sulphate of alumina. From this basin the water passes to the mechanical filters, of which there are thirty-eight, then to a collecting conduit of reinforced concrete, from which it goes to the ozone plant.

In the ozone plant the apparatus is designed to bring the ozone into intimate contact with the water. As is well known, ozone is a form of what may be termed intensified oxygen, and is ordinarily produced in the air by flashes of lightning. In the ozone producers, minute electrical discharges, small flashes of lightning in fact, produce the ozone artificially, and the air heavily charged with ozone thus produced is mingled with the water, oxygenizing the impure matter, which is broken up into gases and disorganized matter, the latter as harmless as sand, and the gases escaping into the air, leaving the water entirely pure. The air charged with ozone is carried into

the water-mixing columns, which are fed by the collecting conduit. There are five such ozone sterilizing units, each having a capacity of 3,000 gallons per hour.

Owing to the great interest excited by this plant, and to the fact that the waters of the Neva are of such an unfavorable character, constant tests are made of the results. The plant has been in operation for a year and is said to be highly successful, indeed beyond anything that could be expected of a purely mechanical filter plant.

Pumping, Distributing and Metering

Cities having gravity feed water supply are more fortunate than others which must go to the expense of pumping stations and water towers or storage reservoirs to create the necessary head for the distributing system.

In cities in which there is a large supply of water at a low head, a water-power plant may be erected, utilizing the water for generating electricity to drive the pumps of the pumping station, thus using the large volume of water at the low head to elevate a smaller volume to a higher head.

The combined electric generating and



TERMINAL FOUNTAIN DI TREVI, ROME

An architectural embellishment worthy of the city

pumping station may be so arranged that during part of the twenty-four hours current may be used for light and power purposes, while during the remainder of the time, when this demand has fallen off, the electric pumps may be operated, thus utilizing the equipment of the station to the fullest degree.

In some cities even the water power plant may be so favorably located that after the water passes through the turbines, generating electric power, it may still possess sufficient head to pass through the purifying system and distributing mains by gravity. This would be an ideal condition, but it is one seldom realized, though its possibility is too often overlooked by engineers. Such a plant may be economically developed, even at some distance from the city. In laying it out, however, only the most experienced engineers should be retained, as a plant not properly designed may prove uneconomical. The interest on the money invested may amount to more than the value of the electric current produced.

The distributing mains throughout the city should be so laid out that accidents in any section may be confined to a small area. Provision should be made so that an affected section may be readily cut out by by-passing.

In the last decade, steel pipes have come into use abroad for city water mains, and cast iron pipes are being replaced by steel pipes. Steel pipes are lap-welded by the autogenous process, and are not riveted. They are very much lighter in weight, are made in greater lengths than cast iron pipes and are much more easily laid. They also have the great advantage of not being liable to breakage when in place, which, in the case of cast iron pipes, sometimes results in not only flooding the neighborhood, causing damage and inconvenience, but also



NEPTUNE-GROUP AT DRESDEN

in exposing large sections of the city to fire risk. Steel pipes, further, are not so much subject to leakage, as the settlement of earth has little effect on them, while with cast iron pipes, it produces a great volume of leakage, which often remains undiscovered.

There is great leakage in many American city water systems, and the authorities are usually unable to tell what becomes of the water. The quantity of water consumed in certain of the larger cities of the United States and Europe is as follows:

Pittsburgh, 220 gallons per capita per day; Buffalo, 310; Philadelphia, 205; Chicago, 225; Salt Lake City, 310; Paris, 65; Hamburg, 44; London, 39; Liverpool, 38; Amsterdam, 37; Copenhagen, 27; Dresden, 26, and Berlin, 22.

European cities, although sprinkling and washing the streets and using water freely for other purposes, have a much lower consumption. For this a variety of causes may be ascribed, including the prevention of leakage, fewer fires and—since the water is more generally metered—the prevention



WITTELSBACH FOUNTAIN, MUNICH, AN ORNAMENTAL TERMINUS OF THE CITY AQUEDUCT

The basin is 42 feet wide and 82 feet long, and the symbolic figures are 10 feet in height

of unnecessary waste. The enormous cost to many American cities of the water supply system is a serious burden on the taxpayers, and measures should be taken to stop needless waste. This may be partially accomplished by remedying faults of construction and operation, and—as some cities have already learned—by metering, so that the consumer pays for what he uses. This proves the easiest, most equitable and most effective system of water conservation.

Water Towers, Aqueducts and Fountains

The water supply system of a city should be utilized in the design of the city to produce esthetic effects, being peculiarly well adapted for such purposes.

In many cities water towers of a highly ornamental character may be erected, constructed of reinforced concrete, steel or masonry. Attractive towers of this kind should be erected, whenever possible, instead of the unsightly steel towers or standpipes so commonly put up.

Cities which draw their supply of water from distant watersheds may find it of advantage to conduct it through an aqueduct, which, when led across valleys, offers great opportunities for effective architectural treatment. A surplus of water may be drawn from the watershed to be used at

some selected point, forming an artificial cascade and waterfalls, while a highway may be built on the aqueduct.

Where water is supplied from sources requiring pumping stations, these should be of well-designed monumental character. In the city itself, as an architectural symbol of the water supply system, there should be erected monumental terminal fountains. These should be either in the form of geysers or cascades, and they are susceptible of a high degree of architectural ornamentation. Such fountains are extremely popular in European cities and form most interesting and effective features in city planning.

In Rome the terminal fountains of Aqua Paola and the Fontana Trevi, and in Marseilles the fountain of the Palais Long Champ are excellent examples; while German cities abound with similar works in modern style, for example, the Wittelsbach Fountain at Munich, which consists of a basin 82 feet in length and 42 feet in width, from which rises a pedestal bearing four masks, symbolical of the different "temperaments" of water. On the top of this is a basin 18 feet in diameter, and above this a smaller basin from which the water issues. On the right and left of the lower basin are two colossal groups in marble, 10 feet high and 13 feet wide; a female figure upon a

water-bull and a male figure upon a water-horse symbolizing respectively the fertilizing and destructive power of water.

A well-known monumental water tower is that at Mannheim, Germany, in which the tower is utilized as an ornamental structure in the center of the city, surrounded by parking and fountains.

While city water supply systems are strictly engineering propositions, it will be seen that opportunity is afforded for utilizing not only the art of the architect but also that of the sculptor in symbolizing the city's possessions and the means of supplying its citizens with one of the most important of all the necessities of life—water. The displaying of the city's water in this

way in the most attractive manner serves not only as an embellishment of the city, but has a most important hygienic effect, since if the displayed water is seen thus publicly to be muddy and impure it will arouse public opinion to the point of action, and insure the obtaining of a supply of pure water which the city will not be ashamed to show to its citizens and visitors.

The building of a monumental fountain in New York, for example, at a cost of \$160,000 would provide the city with an attractive structure, perhaps the greatest of its kind in the world, yet its cost would be but one-tenth of one per cent of that of the aqueduct system which the city is now constructing at a cost of \$160,000,000.



A SIMPLE, BUT EFFECTIVE, MONUMENTAL FOUNTAIN SUITABLE AS A MODEL FOR WATER SUPPLY TERMINAL FOUNTAINS

Articles by Mr. Koester on other phases of Engineering in City Planning will appear in future issues



SPRINKLING FILTER IN OPERATION AT THE CHAMBERSBURG SEWAGE TREATMENT PLANT

Sewage Treatment Plant and Other Borough Improvements in Chambersburg, Pa.

By Charles F. Mebus

Member A. S. C. E.

IT is safe to say that no town of its age and size within the state of Pennsylvania has progressed more during the last three years than Chambersburg, whose population is 12,000. It has a new fire-proof theater; a most artistic new post office; a new hotel which easily ranks with the best in the state; a new mountain water supply; a complete new sanitary system of sewers and up-to-date sewage treatment plant. In addition, the borough council has an ambitious program on foot for street improvements as soon as the house connections to the new sewers are made, and the electric lighting plant is to be brought up to date the coming season.

The Cumberland Valley Railroad (Pennsylvania Line) is building, at a cost of upwards of a million dollars, a high grade line through the borough, and largely on ground which had formerly been low, marshy and comparatively useless, except as a habitat for the mosquito. All bridges on this line are of reinforced concrete and very attractive in appearance. A new

passenger station will also be built at once by the railroad company.

The electric light plant, the water supply system, the sewer system and sewage treatment plant are all owned and operated by the municipality. It is only fair to state that the borough affairs are in exceptionally good hands, and that, from the burgess down to the minor borough employe, there is the most excellent team work, which makes for progress, efficiency and economy. Everything was accomplished by a borough council, working under laws which have been on the statute books of Pennsylvania for about a half century, and enacted long before many of the modern improvements recently installed were known to man. This plain statement of things accomplished shows that, after all, our laws are not so bad when the personality of the municipal government is of the proper kind.

Before any work was attempted, council employed an up-to-date borough engineer, who made the necessary surveys for the

water and sewerage improvements. Consulting engineers were also employed to design the water supply and sewer systems and sewage treatment plants. Plans were made, specifications written, contracts advertised, awarded and carried out on a strictly business basis. Mr. R. M. Huber, the borough's engineer, had immediate charge of all work during the construction period. He was in consultation, for the water supply, with the Birkenbine Engineering Offices, Philadelphia, and for the sewer system and sewage treatment plant, with Messrs. Albright & Mebus, of Philadelphia.

The water supply is taken from a stream in South Mountain at a point 11 miles from the borough limits. The watershed lies entirely within the State Forest Reservation, and the water needs no treatment or mechanical lifting. In addition to the main from the mountains, a two-million gallon storage reservoir and a stand-pipe were constructed. The cost of the water supply system was over \$150,000.

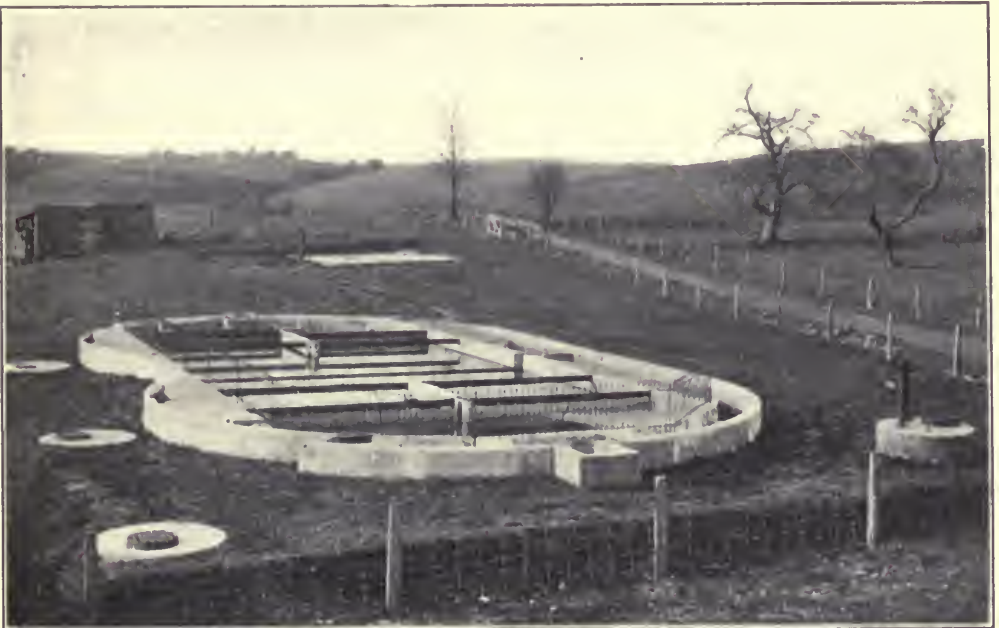
The sewer system presented many difficulties by reason of the fact that the borough is trisected by two creeks, the Conococheague and Falling Spring. These streams have but a slight fall, and their banks are built up to the water's edge. The

main outfall sewer, through the business section, is constructed above the high water line on top of a concrete retaining wall at the side of the creek. From a civic improvement standpoint alone, this sewer is worth its cost to the borough, as thereby an unsightly creek bank has been completely transformed and made an attractive feature in the center of the town. The main sewer follows the general course of the Conococheague Creek for almost two miles, when it crosses under the creek by an inverted syphon 960 feet long, which terminates in a collecting well, from which the sewage is forced by centrifugal pumps (electrically controlled and driven) through a force main to the treatment plant, distant about 900 feet.

The sewage treatment plant occupies a side hill position, favorable for placing the several units, which consist of settling tanks, a sprinkling filter, secondary settling tanks and a sand filter for drying the sludge from the settling tanks.

The plant is designed to treat normally 900,000 gallons of sewage in 24 hours, and provision is made for constructing additional settling tanks and extending the area of the filters whenever necessity may demand it.

The settling tanks, which are of the Ger-



IMHOFF SETTLING TANKS, CHAMBERSBURG



SECONDARY SETTLING TANKS, CHAMBERSBURG SEWAGE TREATMENT PLANT

man Imhoff type, receive the sewage from the force main. The tanks have a capacity to make the detention period about 3 hours. The tanks are provided with sedimentation and sludge-decomposing compartments and with baffles to prevent the gases of decomposition from passing through the sedimentation compartment. The piping is arranged to allow of reversing the flow, using the tanks singly, in series or in parallel. Provision is also made for withdrawing the sludge from a sump in the sludge-decom-

posing compartment, 26 feet below the water line and depositing it on the sand filters without any labor other than opening a gate valve. The overflow from the settling tanks is conducted to a syphon chamber, from which the tank effluent is discharged automatically into the distributing system of the sprinkling filter.

The sprinkling filter is rectangular in plan, has a floor of concrete, the depth of the filtering material being 7 feet. The filtering material is crushed limestone, in



GRANT STREET BRIDGE, CUMBERLAND VALLEY RAILROAD, CHAMBERSBURG, PA.

sizes varying from 1 inch to 3 inches. The tank effluent is applied through 140 stationary spraying nozzles at the rate of 2,000,000 gallons per acre per day.

The secondary settling tanks are provided to remove suspended matter from the filter effluent. The Conococheague is a comparatively large stream and no further treatment by said filtration or disinfection is contemplated at present, although the latter process might easily be installed if required by the state authorities.

The sludge-drying beds have a depth of

sand of 2 feet, which is underdrained by terra cotta pipe. The dried residue from the sludge filter is to be spread on land, of which there is plenty on the borough farm.

As is seen from the above, the sewage treatment plant has been designed to effect a good degree of purification. Manual labor and personal attention have been eliminated wherever possible, but only automatic devices of the simplest construction giving positive action have been installed. The cost of the sewerage improvements has been \$250,000.

A Sanitary Survey*



Its Value as a Guide to the Health Department, as a Means of
Securing Cooperation from Other City Officials and of Gain-
ing the Support of Public Opinion—A Check List
for Planning Such a Survey



By M. N. Baker

Editor, Engineering News, New York City; President, Board of Health, Montclair, N. J.

THE one object of a health officer is to conserve the public health. To achieve this noble end in even a modest degree a health officer must first have a clear understanding of what counts in public health work, then ascertain just how much efficient health-protective work is being done and how much left undone in this city under his care, then formulate a plan for future work, see that it is put into effect and make careful and frequent note of the results.

To all who understand what this involves, it would sound like a large program—and such it truly is. But the health officer must not think that he has to do all this single-handed, for that would be an impossible task. He must secure the coöperation of his brother officials in the city government and of various private interests as well, and he must, above all, have public opinion at his back.

The health officer needs the coöperation of his fellow officials because the health of the city depends largely upon the provision and the efficient operation of various public works and services which properly fall in

other city departments, and also because he is dependent upon the council and mayor for funds. He requires the coöperation of various private interests, organized and unorganized, engaged in serving the public with various necessities which affect the public health, because without that coöperation much of his work will go for naught. He needs public opinion at his back, because without that backing no city department can succeed, much less the health department, which is in large measure dependent for its success upon the intelligent and sympathetic support of the citizens.

I shall be better understood in all I say, and particularly as regards the coöperation of other city departments, if I state my belief that—except for certain classes of inspection and a considerable amount of research and educational work—a health department, at least for the present, should confine its efforts almost wholly to what I term direct health-protective work, and particularly to the supervisory control of communicable diseases, the reduction of infant mortality and of the general death rate by methods the results of which are subject to measurement in terms of vital statistics. The relation of the health officer to the col-

* A paper read before the Conference of Sanitary Officers of the State of New York, at Syracuse, December 5, 1912.

lection and disposal of sewage, garbage and other city wastes, and to municipal cleansing or sanitation generally, should be, in my opinion, that of an inspector only, exactly as in the case of the water, milk and food supplies of the city. In fact, as much as possible of the inspection of the sanitary and cleansing operations, both municipal and private, should be vested in other city departments, making the health department, as regards public and private cleansing operations, a sanitary court of last resort, but with power to send out its own detectives as it deems necessary.

The more remote the relationship of a nuisance or a service to the public health, the more generally would its supervision be left to some other city department; while the closer this relationship the closer the supervision by the health department. Thus, the inspection of new plumbing should go to the building department and the inspection of old plumbing to the tenement house or other housing department, because plumbing has comparatively little relation to health, as we have recently learned, and may be inspected quite as efficiently and more economically by a building or tenement department, in connection with its other inspection work, than by the health department. The public milk supply, in contrast, should be inspected by the health department, both as closely reacting on the public health and as not falling naturally in any other city department.

If this be a correct conception of the work of a health department, then the necessity for friendly coöperation with other municipal departments is apparent. Such a conception makes it none the less necessary to have occasional surveys of all the sanitary and other health-protective work of the city, in order to make sure that in the inevitable distribution among city departments of work more or less closely affecting the public health nothing essential shall be neglected, while at the same time all of the many and divergent lines of work shall be thoroughly correlated, wisely proportioned and provided with as ample funds as the current state of the public treasury will permit. Without such correlating and proportioning, some lines of city work fatten while others starve.

Before giving more specific consideration to what should be included in a sanitary

survey and how such a survey should be conducted, I wish to lay still further emphasis upon its value as a guide to the health department, as a means of securing coöperation from other city departments and of gaining the support of public opinion. I shall center my further remarks under this particular head on the sanitary survey as a means of getting appropriations for health and sanitary purposes.

An Aid in Securing Proper Appropriations

We all know that there are many more and much larger demands upon all our municipal treasuries to-day than they can possibly meet without exceeding legal tax and bond limits, or, where these are no bar, without arousing the indignation of taxpayers and hurting the credit of the city. It is, therefore, imperative that every city department be able to back its budget estimates, or requests for annual appropriations, with incontrovertible facts as to the need for the money requested. Such facts, as related to health appropriations, depend in large measure upon well-planned and carefully executed sanitary surveys, and when secured they make city councils and taxpayers alike willing to provide the money necessary to execute a program based upon these surveys and facts, while at the same time disarming opposition of other departments to the desired appropriation and insuring the coöperation of the other departments in carrying out the program.

Moreover, sanitary surveys, in conjunction with an intelligent interpretation of vital statistics (and I am taking it for granted that accurate and complete vital statistics are available), will enable the health officer to use every dollar of his at best too scanty appropriation in the way that will count most in prolonging lives and conserving health; and they will aid the officials of other city departments in coöperating to the same end.

If the statement last made be true, as I most strongly believe, the selection of subjects to be included in a sanitary survey may in large part be chosen from a functional classification of health-board expenditures broad enough to include nearly every line of health-board activity practiced in the United States. Such a classification, made by the writer for quite another purpose in August, 1911, is as follows:

I. *Direct Health-Protective Work.*

- (1) Prevention and Control of Communicable Diseases.
 - (a) Laboratory.
 - (b) Notification and Investigation
 - (c) Immunization.
 - (d) Isolation in Home.
 - (e) Hospitalization.
 - (f) Disinfection.
 - (g) Medical School Inspection—for Communicable Diseases.
 - (h) Records.
 - (i) Educational.
- (2) Reduction in Infant Mortality.
 - (a) Medical.
 - (b) Nursing.
 - (c) Supplying Milk, etc.
 - (d) Records.
 - (e) Educational.
- (3) General Health-Building and Maintenance.
 - (a) Laboratory.
 - (b) Physical and Mental Inspection of School Children.
 - (c) Housing Control.
 - (d) Factory Inspection.
 - (e) Milk Control.
 - (f) Pure Food and Drugs.
 - (g) Pure Water.
 - (h) Pure Air:
 - Ventilation.
 - Gas Inspection.

II. *Indirect or Remote Health-Protective Work.*

- (1) Municipal Cleansing.
 - (a) Garbage.
 - (b) Ashes.
 - (c) Rubbish.
 - (d) Dead Animals.
 - (e) Offal and Market Refuse.
 - (f) Night Soil.
 - (g) Sewage.
 - (h) Street Cleaning and Sprinkling.
 - (i) Smoke Prevention.
 - (j) Fly Reduction.
 - (k) Mosquito Reduction.
 - (l) Rat Reduction.
 - (m) Records.
 - (n) Educational.
 - (o) Publicity.
- (2) Private Cleansing.
 - (a) Plumbing Permits and Inspection.
 - (b) Suppression of Smells and Miscellaneous Nuisances.

III. *General*—so far as not distributable under heads and subheads of II and III.

- (1) Records:
 - (a) Vital Statistics.
 - (b) Accounting.
 - (c) Miscellaneous.
- (2) Research.
- (3) Publicity.
- (4) Legal.
- (5) General Supplies—including Rent, Water, Light, Heat, etc.
- (6) Administrative Salaries.

Distribute under each head and subhead, as far as practical, every such item as salaries, supplies (including freight, express and cartage), transportation, publicity, communication (postage, telephone, telegraph), educational, research, legal, records, etc. Sums that cannot be so distributed, which should be comparatively few and small, go under III (General), but even here they should not go under "Miscellaneous" or "Unclassified."

Communicable Diseases, items (a) to (f) should preferably be given separately for each disease, or at least for typhoid fever, scarlet fever, diphtheria and tuberculosis.

This classification is easily expanded by further classification to any extent desired, and it may be simplified even more readily by omitting all the subheads designated by letters, or still further by using only the three grand divisions I, II and III. In either case of simplification the subheads not used as separate accounts would serve as a guide to such of the classifications or accounts as were retained.

I wish to call particular attention to the long list of municipal cleansing items, all of which I have put under II, Indirect Health-Protective Work, although in some parts of the country a few of these, like Mosquito Reduction and Rat Reduction, would probably be better placed under I, Direct Health-Protective Work.

Whatever may be the opinion of health officers as to the merits of my classification of health-board expenditures (a subject not under discussion at present), I think the schedule is sufficiently full to serve most health officers as a check list for use in planning a sanitary and health-protective survey of their city.

Suggested Order of Procedure

Using the term "sanitary survey" in a broad sense, as I am doing throughout this paper, I would suggest that every health department might advantageously survey the work being done in its city under most if not all the items included in I, Direct Health-Protective Work. Broadly speaking, a survey should not take up II, Indirect Health-Protective Work, until I, or direct work, has been fairly covered, the results worked up and steps taken to put into force the reforms and extensions of health-protective work thus suggested. When Division II is entered, unless it is possible to cover the whole field at once, topics may be selected for survey according to the special needs of each locality. As a rule, the sewerage system and all that pertains to the storage, collection and removal of night soil would perhaps de-

mand first attention, particularly in the smaller cities, where many streets are unsewered and many houses are not supplied with public water, and therefore the people are liable to drink polluted well water and are exposed to dangers from open privies. Street cleaning probably deserves particular attention in many cities. Fly, mosquito and rat reduction may need to be given early attention in some cities and may have little relation to public health in others. Garbage collection and disposal probably have less direct bearing upon the public health than most health officers suppose, and whether so or not a survey of this line of work would be comparatively simple.

How a sanitary survey should be conducted in detail is beyond the time limits of this paper, even had I yet attempted to work out a system. The score cards in use for dairy inspection serve admirably both as a guide to inspectors and as a standard for recording results for comparative purposes.* A similar plan has been worked out for ice cream manufactories by the New Jersey State Board of Health. The New York Tenement House Department has a complete record card for its inspections, and probably there are but few of our larger city health departments that have not worked out a number of record forms which would serve as models for score cards for various elements of a complete sanitary survey.

Who Should Conduct the Survey?

By whom should a sanitary survey be made? Preferably by the health department, with the coöperation of the other city departments directly concerned. In most cases it would be advantageous to secure the advice and perhaps the directing services of a competent consulting sanitarian from outside the city, so as to get the

benefit of broader experience and outlook than would otherwise be possible, and to have eyes not dulled by familiarity, perhaps superficial, with local conditions or blinded by local prejudices.

I trust that no one will confuse the kind of sanitary survey which I have in mind with the hasty general inspections of a few of our cities which have been made by some "expert" possessed of more zeal for uplift work than knowledge of how to accomplish it and with little understanding of or sympathy with what is already being accomplished. Doubtless these "surveys" have been fruitful of somewhat more than a temporary sensation, but for the most part their value is slight and the disclosures and advice which they bring forth soon forgotten.

The kind of survey I have in mind would provide a systematic record of work being attempted and of efficiencies being attained; a record susceptible of comparison with similar records in after years and, to some extent at least, comparable with like records for other cities. Such surveys might cover one or several or all of a city's sanitary and health-protective agencies, and might be made at frequent or at infrequent intervals. The best plan would be to have one, or some part of one, always in progress—as is, indeed, the case in a more or less complete form in many of our cities, although too generally without much system.

Finally, so far as is possible, any sanitary survey should be correlated with the vital statistics of the city in question and the efficiency of the activity surveyed should also be expressed in terms of unit cost. This presupposes complete and accurate vital statistics, a system of recording and classifying health and sanitary expenditures in accordance with their functional object, and, last but not least, an intelligent interpretation of surveys, vital statistics and unit costs in terms which can be grasped by the city official and the citizen alike.

* See reproductions of a number of these in Rosenau's "The Milk Question," Houghton, Mifflin & Co., 1912.



A Symposium on Housing Reform

Abstracts of Seven Papers Presented at the Second National Conference
on Housing in America, at Philadelphia, December 4-6, 1912*

Where City Planning and Housing Meet

By Andrew Wright Crawford, Esq., of
Philadelphia

MANY of the efforts of housing reformers, I am frank to say, seem to me to be merely to treat the symptoms, while the disease is ignored. That disease is lack of adequate transportation facilities. If they were adequate, if a workman could leave a neighborhood where land is cheap enough to enable him to try to own his own home and could reach his place of work by a transit system offering rapidity of carriage, shortness of intervals between trains and cheap rates, many of the present threatening and dreadful housing problems would not exist. Transportation is a function of city planning, and hence city planning is the chief determining, underlying, fundamental factor in housing. City planning is concerned with the grades of streets, and the sewer system is one determining factor as to grades. Housing depends directly on sewers. It would be wise to require that the water and sewer pipes be laid and the street paved before any building be erected fronting upon the street. This can be done by direct legislation.

City planning determines at one and the same time and by one and the same operation where one street shall run and how far it is to be from the nearest street running parallel to it—and in so doing city planning necessarily and vitally controls two of the block dimensions and the lot depths, and hence housing.

The physical area of the city streets takes on the average more than one-third of the area of your city. In Washington the total area of the open spaces of the city streets, parks and grounds of public buildings is 54 per cent; only 46 per cent is left for individual use. It is a matter of very serious

concern to learn what should be the total area surrendered to public use. I do not believe that a definite percentage could or should be established to apply to all cities; but I do believe that the principles to be observed in any city, the matters to be taken into consideration in each case, are capable of deduction and determination.

The problem of lot depth is one that, I submit, is impossible of solution by any rule of thumb. Not only will the desirable depth vary with different cities, but it will vary with each section of the same city, and, moreover—and this is a particularly difficult thing to handle—it will vary with succeeding generations, or even decades, in the same section, and in the same block. The only permanent thing is change.

A distance between streets of 200 feet, with an average lot depth of 100 feet is unwise. New York proves that much. A distance of 100 to 150 feet between streets, giving an average of from 50 to 75 feet in lot depth, has worked well in Philadelphia.

The minimum lot now being created in Philadelphia is 14 by 41 feet. The area of this lot is 574 square feet. Our law requires 144 square feet to be unoccupied by buildings. This area is exactly one-half a square foot more than one-quarter of the area of the 14 by 41 foot lot. This means that for the smallest home in the city, 25 per cent of the lot must be open space. This is a good proportion so long as the lot is occupied by two-story houses. The poorest or smallest lot being so limited, the larger lots should be required to have the same proportion of open space. Instead of that, the absolute figure of 144 square feet is applied—obviously an unwise method. In many cities more than 25 per cent could be kept open, and in the suburbs of nearly every city the proportion could be higher, up to possibly 50 per cent. The effect upon transportation, however, will be noted later.

If the 14 by 41 foot lot is occupied by a house higher than two stories the open area at the back, being but about 10 feet (10 by 14, equaling 140 square feet), the 25 per

* The complete papers here abstracted, together with the discussions on them, and other proceedings of the conference, will be published in book form by the National Housing Association.

cent rapidly becomes insufficient. It becomes absurd if the building and its neighbors reach up to eight or ten stories. Obviously the greater the height of the house, the greater should be the open space required.

The lot, 14 by 41 feet, used throughout the interior oblong block as I have described it, gives an average of 75 houses to the acre within the building lines of the oblong. If one-half of the boundary streets be added to the area of the oblong within the building lines, that is, one-half of two 40-foot streets and one-half of the streets at each end, which are usually 60-foot streets, the 14 by 41-foot lot gives an average of 43 houses to the acre. Of this area exactly 40 per cent is taken up by the street surface. In our outlying sections it will be found that larger and larger percentages are being so taken up.

This number of houses to the acre represents perhaps the maximum crowding of houses per acre that should be allowed. The later practice abroad is to compel the distribution of houses by reducing the number per acre permitted, and it is stated that the objective is in the neighborhood of 10 or 12 houses per acre. Obviously this will give opportunities for side ventilation and for front and back yards; on the other hand, it will vastly increase the transportation problem and the cost of street works.

The existing system of two-story houses has up to this time worked well in Philadelphia generally. Would it work as generally well elsewhere? I believe it would, after some failures of the individuals who undertake the initial operations in a city not used to the type. Here is where that troublesome thing called "fashion" comes in—and fashion often gets a kind of vested interest which gives it material grounds upon which to resist the introduction of too drastically fundamental an innovation. The Boston three-decker is a hideous "sport" of housing, as much a malformation in houses as is the Boston terrier a malformed "sport" in dogs. But it takes in Boston. Bring the three-decker to Philadelphia and I'll guarantee it complete and utter failure—I'm glad to say so—but I'm sorry to say that if the Philadelphia house were taken to Boston the prospect of failure would be almost as gloomy. To supplant a bad fashion by a good fashion needs time and education. The change must be slow, the

new type must be introduced gradually. This will not suit the radical reformer who wants to transform Rome in a day, though it was not built in one.

I have suggested that two hundred feet is generally too great a distance between lots. Yet in manufacturing sections it may be too small. For the areas to be devoted to great terminals, to factories, to large department stores—in a word, to business—the desirable block and lot unit will vary from that to be devoted to housing. But the difficulty is that the housing area is continually surrendering to the business area. This change can only be met by securing the main thoroughfares and then permitting the obliteration of minor streets promptly when their area is needed for the expansion of legitimate business. It is the part of housing and city planning to further business, not to hinder it. Other movements may be wisely or unwisely directed to the limiting of great concerns, to the break-up of the department store, for instance. But it is the primary duty of the city planner to serve the community as it is, not as it ought to be. Other agencies must bring about the intellectual, the moral and the economic millennium; the physical city must be fitted to the facts as they are.

The Philadelphia requirement of a minimum of 40 feet for the width of the street represented what seemed to be an advance when promulgated. It insured 10 feet more open space than was insured theretofore. But it took that much more land for the street and added proportionately to the cost of some of the street works. If the situation were the same as when that ordinance was approved, perhaps the reasons for its approval would still be persuasive. But height regulation is, I believe, much nearer. Boston has kept all buildings down to 125 feet, and in considerable areas to 80 feet. This restriction was upheld by the Supreme Court of the state and confirmed in that of the nation in *Welch vs. Swasey* (214 U. S., 91). If in Philadelphia we could secure legislation to provide that the houses fronting upon our narrower streets should not exceed their width in height it would be wise at once to repeal our provision as to 40-foot minimum streets and to permit them to be as narrow as 25 feet. Then if we can break away from our everlasting gridiron and have streets of various widths not following the straight lines, our

city will become a city of cozy, comfortable, picturesque houses—not only merely a city of two hundred thousand homes of one type.

My height program would be to limit the skyscraper area to an average of those already in existence—purely a practical and, I believe, comparatively temporary suggestion—to be succeeded by more stringent regulations; to limit the rest of the business area to 125 feet at a maximum, but to introduce a regulating rule according to some term of the street width—for instance, $1\frac{1}{2}$; and everywhere else to limit all buildings, over every inch of the lots occupied, to a height equal to the width of the street, permitting chimneys and water tanks only to go above that limit. And I believe the community is ready and the judges are ready to sustain such regulations.

As building regulations are made stricter, up goes the cost of the house, and when it rises in cost some stratum of the population is debarred from even an attempt at home ownership and all strata are affected. The effect, therefore, of proposed building requirements on the cost of the house, whether as purchase price or as rent, to the expectant inhabitants thereof, is a matter for the serious consideration of those interested in housing. We must carefully weigh the loss to the community through this increased price or rent as against the gain to the community, if any, because of greater solidity of construction or other improvement, if improvement it is, that may be caused by new building regulations.



The Factory and the Home

**Shall the Homes of Factory Employes Go
to the City Outskirts with
the Factory**

By John Nolen

Landscape Architect, Cambridge, Mass.

From the point of view of the general welfare—and that naturally is the point of view of the National Housing Association—there are three subordinate questions that need to be asked and answers to them attempted in considering the main question, namely, shall the homes of factory employes go to city outskirts with the factory?

Briefly put, these three questions are:

(1) What location generally is the best for factory efficiency? (2) What location for factories and for homes for factory em-

ployes is advantageous for the city as a whole? (3) Most fundamental of all. Assuming that factories are located on the outskirts of a city, where should the men employed in these factories be encouraged to live?

1. So far as location goes, the main items that determine factory efficiency are as follows:

(a) Cheap land. Cheap or low priced land reduces the amount of capital invested in the factory plant and, other things being equal, reduces the cost of production. It also permits the construction of lower and cheaper buildings. It warrants a generous reservation for growth on a general organized plan for future development. Cheap land also means lower annual taxes.

(b) Factory efficiency often calls for land in large blocks, unbroken and uninterrupted by public streets and roads.

(c) Successful factory organization calls for ample freight facilities. These are not always better obtained in the outskirts of cities, but in the long run they are apt to be so.

(d) In particular, factory efficiency is dependent upon success in obtaining and holding employes who are well housed at low rates in a good general environment. The greater likelihood of getting well housed and contented employes on the outskirts of a city, rather than in more central and more densely built up sections, cannot be determined offhand. It would depend largely upon the character of houses available, the grade of community development in the outskirts, and the facilities for transportation to the city. This item may be better discussed under the third heading.

2. The second important division of the subject is, what location for factories and for homes for employes in factories is most advantageous for the city as a whole? This question may be answered in favor of the outskirts for four reasons: (a) The city needs its centrally located land for business and commercial purposes. (b) It needs additional land near-by for homes for those engaged in business and commerce. (c) The city needs to have its streets relieved, so far as possible, from the hauling of raw materials and factory products to and from the factory. (d) It is desirable that the central city should be free from smoke nuisance, etc., often associated with the factories.



THREE-DECKERS IN DORCHESTER, MASS.

As particular cities have particular functions, so each part of a city to some extent has fitness for a particular use. The inner city almost invariably is best adapted for business and the demands incident to business. Retail stores, public buildings, places of amusement, centers for education, art and music—these need to be conveniently and centrally located. Also the homes of the people who are engaged in these departments of city life need to be as conveniently and as centrally located as possible. Everything which occupies land in the central city which could be better done or as well done in the outskirts, tends to distribute these business facilities and the demands incident to them over an unnecessarily large area, and is therefore a disadvantage. Of course, this statement is true only as a generalization. In particular instances there might be many exceptions.

3. The most fundamental factor, however, from the point of view of this paper, is the question of the location of the homes of factory employees, assuming that the factories themselves have been or are about to be located in the outskirts of a city, and assuming further that the factories under consideration are not distinctly objectionable in amount of smoke nuisance or smell connected with their work.

The more important advantages that would seem to be assured to workmen's

homes in the outskirts under these circumstances as against homes in the city are three. The first and most important is the opportunity for cheap land for their homes. Unless the land is cheap a workman can have but a small amount of it for his own exclusive use. It is seldom that the workman can afford a home valued higher than \$2,000 or \$3,000, which would mean a rent equivalent to from \$180 to \$300 a year and an annual income of from \$750 to \$1,200 a year. On this assumption, the workmen under consideration could scarcely afford to occupy land valued at more than from \$400 to \$600. In the outskirts it would be often possible to obtain for this sum a tenth or even an eighth of an acre, which would make possible a satisfactory detached or semi-detached single family home.

In the outskirts the workman would have the advantage of proximity to his work and the incidental saving of car fare, which might amount in a year to as much as \$30, equivalent to 5 per cent interest on \$600, just about enough, in fact, to cover the value of his land. This proximity to work in many cases would also permit of the return of the workman to his home for a mid-day meal or the carrying of such a meal to him hot by some member of the family.

A home in the outskirts naturally would place a workman close to the open country and to the city's larger parks, a situation

particularly advantageous to his wife and children. As a rule the workman has one home only the year round, and his vacation is apt to be spent at home.

In order that a home in the outskirts may be acceptable to the average workman, two additional advantages are indispensable. The first of these consists in certain local facilities such as stores, schools, playgrounds, lodges, churches, social centers, etc. The second is some means of transportation that will give the workman and his family at least several times a week an opportunity to enjoy and mingle in the life of crowded city places and to draw occasionally upon the big city's attractions in music, art, and drama. Such a journey should usually not require more than a half hour's time nor more than the usual five cent fare.

Conclusions.—The general conclusions from this examination of the problem of the factory and the home are: (1) That new factories should locate in the outskirts whenever practicable; (2) that existing factories in cities should be encouraged to remove to the outskirts as opportunity offers; (3) that employers and employes should coöperate and create a real local community on the outskirts of cities near factories, each doing his part to make the local community convenient and attractive; (4) that the same coöperation should be directed toward securing for the employes the real advantages and permanent attractions of city life; (5) that the choice for employes should not be between the city and the country, both of which should be recognized as desirable—the more open areas in the outskirts for daily life and the city for occasional inspiration and diversion.

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Rural and Suburban Housing

By Elmer S. Forbes

Chairman, Housing Committee, Massachusetts Civic League

It is very unfortunate that in the public mind housing reform has been identified with tenement house reform. There is a housing problem wherever there are houses, whether they are occupied by one family or more. It should be clearly understood that for the most part the tenement house problem does not enter into the question.

Outside of New England and certain metropolitan districts, so far as my own observation goes, the tenement house in country and suburban districts is practically a negligible quantity.

More or less bad housing is to be found in the country all over the United States, but in some respects it is not so bad nor does it have the same causes as in the cities. The dwellings in question may be fairly well built or be miserable shacks or anything between the two; dirt usually reigns supreme within doors; they may be crowded to the limit; water is apt to be scarce and sanitary conditions to be unspeakably vile. On the other hand, there is plenty of space



REAR OF THREE-DECKERS, SHOWING DANGEROUS FIRE CONDITIONS AND LACK OF YARD SPACE

and fresh air and sunlight, at least outside; there is no block nor lot overcrowding; and windowless rooms are not very common.

Personally, I believe the explanation of the country slum is to be sought, not so much in unfavorable economic conditions as in the physical and mental and moral deficiencies of the occupants. Behind the housing problem is a larger human problem, and until this is settled not much can be done for the other. There is work here for the police and the courts, for the society

The same thing is indicated by conditions in suburban New England. Here we have a form of tenement house, the wooden three-family flat, which is spreading like the cholera or yellow fever, and will surely make its appearance in other parts of the country unless measures are taken to prevent it. It was first built here because, as it does not fall within the local definition of a tenement house, it is not subject to any of the requirements of the tenement house law. Its rooms may be practically closets,



THE UTTERLY INEXCUSABLE THREE-DECKER IN THE OPEN COUNTRY, AT NORWOOD, MASS.

for the prevention of cruelty to children, for the agent of the associated charities and the friendly visitors, the instructive sanitary inspector, the school nurse and the health officer, for every influence which can be brought to bear upon the problem of family rehabilitation. Speaking generally, it seems to me that the bad housing of the open country is less a problem for the housing reformer than it is for the social experts of other names.

When we turn to the suburban towns and the small cities of fifty thousand population or less, we face a different proposition. Here we are dealing not alone nor principally with the shack occupied by the decadent family, but with the housing accommodations of every class of society, and here we run the gamut of housing abominations.

they may be without windows to the outer air if the builder does not choose to put them in; the plumbing can be reduced to the lowest terms, and the toilets may be the dangerous yard privy, and, unless there are local fire regulations, it is possible to build them with only one means of exit and without fire escapes. This type of dwelling is the joint production of the land shark, the shyster architect and the jerry builder, and nothing in the way of a tenement house could be worse except one of the same sort but higher. It is usually of the flimsiest construction, and after a few years the owner is likely to ask for an abatement of taxes because of its depreciation in value. It is a dangerous fire hazard, dreaded alike by the fire department and the owners of neighboring property. It is terribly destructive of real estate values, and the com-



ONE-FAMILY HOUSES IN SOUTH FRAMINGHAM, MASS., WHICH RENT FOR \$15 A MONTH

ing of one such building into a residence district will cut in two the selling price of the nearby properties. We should all agree that the exploitation of the tenant is a greater injustice than the destruction of property values, but there is no reason why

either of these things should be permitted. We have heard much about the injury to the tenant, but not so much of the other side of the question. One of the serious results of the lack of building regulations is that no property owner, be he large or



HOUSE IN WESTON, MASS., 13 MILES FROM BOSTON, RENTING FOR \$10 A MONTH

At the present cost of building, this could probably be built to rent for \$14 or \$15 per month

small, knows what is going to happen to him.

A policeman in a country town which I know well built himself a comfortable house on a generous lot and adorned it with trees and shrubs to suit his taste. Along came a speculator, who planted a flimsy firetrap of a three-decker within three feet of his lot line, cutting off his sunlight and robbing him of half the savings of his lifetime. These are the tragedies of the suburban towns, and they are certainly worthy of the attention of the National Housing Association. They do things better than this in Germany, as we all know. There you are not allowed to go on your way with no regard whatever for your neighbor. Why should these things be permitted in America? At the same time that the protection of the law is thrown around the tenant, securing him against oppression and wrong on the part of the owner of his dwelling, something should be done to preserve the beauty and attractiveness of our towns and cities and to afford a reasonable safeguard for the property values of the homes of their citizens.

The only difference between the evil housing conditions of the small village of a few hundred people and those of the city of as many thousand population is in

degree, not in kind. Bad housing is quite as much a matter of the one- and the two-family house as it is of the dwelling which shelters a much larger number of families, and reform is just as necessary in the one case as in the other. It makes no difference what kind of a house a man lives in, he has a moral right to fresh air and sunlight, to proper sanitary conveniences, to privacy, to protection against fire and to freedom from overcrowding, because these things are necessary for health and decent living.

I am convinced that the only way in which owners, occupants and community can be assured of adequate protection against bad living conditions is by bringing every kind of dwelling within the scope of the law. A tenement house law is good as a step towards something better, but the situation demands not a tenement house, but a well-enforced housing law. Under such a law it will probably be necessary to classify dwelling houses according to the number of families occupying them, but this offers no great difficulty. The great achievement will be the wiping out of the troublesome distinction between tenement houses and private residences and the bringing of them all under one general housing law.



THESE COMFORTABLE AND WELL-FINISHED HOUSES IN SOUTH FRAMINGHAM, MASS., RENT FOR \$25 A MONTH



BACK YARDS OF ONE AND TWO-FAMILY HOUSES IN WILMINGTON, DEL.

Types of Wage-Earners' Houses

By John Ihlder

Field Secretary, National Housing Association

IN order to bring a discussion on the best types of wage-earners' houses within practical limits, it is necessary to eliminate at the beginning some of the things which have a powerful influence in determining types but which themselves are so big and complicated that they require special treatment. Among these are the width and arrangement of streets, cost of building, public regulation, accessibility, land values, and lot units, each of which must be treated at some length, if at all. So in this paper they will be simply mentioned in passing.

Further, in order that there may be no confusion of mind, it is well to state at the beginning that this paper deals only with new houses, not at all with the remodeling of old houses; with houses designed for more or less permanent occupancy by families, not for transients or individuals; that it is written with the unskilled laborer as well as the skilled artisan in mind, and that it seeks to set practical standards, not to picture a modern Utopia. It seeks merely

to state what should be the minimum requirements in any attempt to provide housing for families.

With these limitations I would divide the subject in two ways: (1) as to location, whether in an already closely built section of a city, on its more sparsely settled outskirts or in a village; (2) as to character, whether tenement (three or more families), two- or one-family houses. The second and third of these classes are subdivided into row, semi-detached and detached.

The third sub-division, the detached, single family house, is, of course, the ideal that is to be kept constantly in mind. The others are compromises which, for one reason or another, it is necessary to make.

The fundamental requirements for all are:

Direct light and air from out-of-doors for every room.

Adequate and convenient water supply.

Adequate, convenient and sanitary toilet facilities.

Protection from the weather.

Freedom from dampness.

Enough rooms and such an arrangement of rooms as will make some degree of privacy possible.

Added to these, in tenement houses especially, there must be safeguards against fire.

Having then the ideal toward which we are to look and the fundamentals which we must keep, the question is, how nearly can we approach the ideal in the three locations mentioned? Briefly stated it would work out as follows:

- (a) Downtown.
 - Tenement houses.
 - Two-family houses in rows.
 - Single family houses in rows.
- (b) Outskirts.
 - Two-family houses.
 - Terrace or group.
 - Semi-detached.
 - Detached.
 - One-family houses.
 - Terrace or group.
 - Semi-detached.
 - Detached.
- (c) Village.
 - One-family houses.
 - Detached.



MILL OPERATIVE'S COTTAGE IN LAWRENCE, MASS.

(a) Beginning with the downtown or already closely built section of the city, the question is, which style of house should be erected, or, rather, which style of house should not be erected? In such districts it is out of the question to consider detached or even semi-detached houses for any except the wealthy. They must be one or other of the three classes built in solid rows.

The first point, then, is whether tenements should be erected. An answer in the affirmative is based upon two facts. First, is the section already in large degree a tenement district? If it is, land values have undoubtedly already risen to a point where only the income to be derived from

multiple dwellings will yield a fair return on the investment. And any successful scheme for housing betterment must be based upon its yielding a fair return, 5 or 6 per cent net. Second, is the lot located on a business street? or upon a traffic artery which is fast becoming a business street? In cities up to one hundred and fifty thousand population, even near the center of town, there is usually not enough demand for offices to call for all the stories above the stores which occupy the ground floor. This is true in even greater degree along those traffic highways which reach out toward the suburbs and at those intersections of important streets in the outlying districts where there are little groups of businesses—a bank, three or four groceries

and meat markets, a drug store, etc. The upper stories of these buildings, which are primarily designed for the accommodation of small retail concerns, must be rented for dwellings or they will stand vacant. Nor is it practicable to say that such businesses should be housed in one-story buildings until there is a business demand for more floors. In nearly all of our cities now such buildings are from three to four stories high and the



TWO-FAMILY HOUSES RECENTLY BUILT IN CINCINNATI

upper floors are used as dwellings. They are tenement houses; they will continue to be tenement houses, and so must be recognized.

But if for either of the reasons given above—usage already established or the needs of business—it is practically necessary to build tenement houses, then these houses should be built in such a way as to safeguard the health and the lives of their inhabitants. They must be strictly limited as to the proportion of the lot they may occupy and they must have yards and courts large enough to permit of properly lighting and ventilating every room. Moreover, they must be so constructed as to lessen the fire hazard. If three or more stories high, they should be fireproof throughout.

If it would not pay to erect tenement houses with these restrictions, then there is no justification for erecting tenement houses at all. For the tenement house is in itself unwholesome. It is not, and can not be, a home suited to the life of a family; and its multiplication brings physical and social problems that are a tremendous burden to the community. A few tenement (or apartment) houses fill special needs; for instance, they provide refuges for broken families. And while they are few in number their evil effects are minimized. The way to keep their number adequate only for such special needs is to insist that each one be as wholesome and as safe as it is possible to make it.

If tenement houses are not justified on either of the grounds given above, then the choice lies between the two-family and the single family row house. The two-family house has the great convenience of the tenement, in that an apartment is all on one floor, so that stair climbing is reduced to a minimum. But the necessity for putting enough rooms on one floor to accommodate a family makes it necessary to provide larger court space if every room is to be adequately lighted and ventilated. Even in some of the "model" two-family houses, such as those in Washington and Montreal, this need has not always been fully met.

(b) In the outskirts of the city, where more open building is possible, there is another series of choices. There the houses may be arranged in terraces or groups, which often give a better architectural effect than a multiplication of little single houses, or they may be built in pairs or

singly. In every case, however, there should be a greater proportion of open space than is possible downtown. Where there is space between houses it should be at least fifteen feet, to let in sun and light for the side windows and to reduce the danger of fire leaping from one house to its neighbor, and to secure privacy. If it is impossible to leave at least fifteen feet between houses, it is better that they be built in groups.

(c) Village houses should, of course, be one family and detached, for there is no valid excuse in a location where there is ample room to spread and where land values are low to pile people up in tenements or even in two-family houses. Low land values should be taken advantage of to give each house its lawn or garden, for these have almost as much to do with making the house a home as have interior arrangements. If the village is being developed by one man or company, care in the placing of the houses so as to increase convenience and improve the appearance of the street or of the whole community is well worth the extra trouble. For a home is more than a sanitary shelter, and whatever adds to its appeal is of physical, economic and social value.

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Regulation by Law

By Mrs. Albion Fellows Bacon
Secretary, Indiana Housing Association

This paper is addressed to three classes of citizens:

1. Those who have had a housing law for some years, smoothly working, under a competent and well-equipped department.
2. Those who have lately acquired a housing law, who have a new untrained or insufficient force, and who are not regulated very regularly.
3. Those to whom, as yet, housing regulation by law is only a dream and a vision; and this is the largest class.

As a fundamental principle, we state that *every building which is subject to human habitation, occupation or use, should be required by law to be fit, safe and sanitary.* We shall never have the housing reform we need unless we have regulation by law. In all the years that we have been waiting for it to come some other way, it has never come in appreciable quantities.

Not all the doctors, even, can be trusted

with the standards of sanitation. Not all of our business men, even, realize that "bad housing is bad business," but we are depending upon the commercial clubs to bring about housing reform; if they do, it will be by getting housing laws and seeing that they are enforced.

The first requisite of regulation is to have an adequate, well-trained force to carry out the law. In some cities, where housing regulation by law goes on smoothly and harmoniously, it is delightful to see dirt and grime and decay flee away and to watch order and beauty take their place. But in our smaller towns a smaller force has to exert a larger power—a new principle in physics. The first man to hold the office of building inspector under a new housing law earns his salary.

Just as each town has its peculiar housing problem, so each town has its peculiar troubles in enforcing the law. In one city there will be trouble with one set of officials, in another city with another set, and a lack of coöperation is most hurtful, whether it be from the police force, the city attorney, the mayor, or any other person in the administration.

The two things oftenest responsible for poor enforcement are, first, the insufficiency of the force, and, second, the lack of public support. People who are not close to the administration have no idea of the pressure brought to bear upon the building department to make exceptions in favor of certain builders. And when an inspector stands alone, or at least has not the active support of a group of citizens behind him, it takes physical, vital force to battle against the opposition and withstand the pressure.

It is easy to get the public opinion necessary to a demand that the wrongs of the poor shall be righted. The majority of people are horrified and scandalized by the stories and pictures of our slums, and are perfectly willing to have the old tenements and hovels swept away, if they are not asked to help do it. But the ones who applaud housing reform, for the sake of the poor, too often object to our methods of bringing it about. They can't see the connection between our law and the things we are asking for.

Regulation by law will gradually educate the people to right standards. Side by side with this will be the education that comes from good object lessons, such as some of

our architects are giving us, in different towns. And, after a while, a better, broader, higher civic spirit will take the place of opposition to housing regulation.

The making of housing legislation must go as far back as possible. The members of the legislature should be reached in the graded schools, at least in college. That failing, get them the day before election. This was impressed upon us by a senator who confessed: "The first day I was in the legislature, Senator Blank asked me to vote against your bill, and I promised I would. That's why I did it, for I never break my promise." So the next session the race will be to the swift, and it must be our business to beat Senator Blank to this member of unbroken word and a single tax upon his honor.

After deciding what houses shall be regulated, the next most important question is that of standards. Laws may be amended, but it is a very difficult thing to raise a standard; and the houses built now under inadequate laws will not be amended; they will change, but for the worse. Some people say to us, "Don't try to get all you want the first time." All we want! Only city planners can ask for what they really want—those who make garden cities. We cannot ask for those things that make life worth living, only for those things that make life less terrible.

People advise us to build up the law, a little at a time, but a housing law has to be a code; it isn't just like any other law. It's not like a stone wall, to be built round on round. It's like an arch, that must have every stone in its place.

It is most important that standards should not be inadequate. We are impressed that we should require more in towns, where values are reasonable, than in cities, where real estate is high. It is only fair that standards should not be lower, and that we should not ask for less, than people give by custom and choice. If most of the lots have 70 per cent left vacant we should not set the standard at 50 or 60 per cent. On the other hand, when the custom of a town allows inadequate space, the standard should be raised to a point necessary for sanitation.

Moreover, a definition, in a housing law, should be an accurate statement of already existing conditions, not an arbitrary laying down of terms. In Indiana the average tenement has two families, so our defini-

tion makes a tenement apply to two families or more.

We are indebted to every advance made by any state or city in the matter of standards. What has been done by Columbus, Ohio, in getting a law for all houses, and what has been done in Massachusetts, in setting standards, will be of the greatest value to every other state. Members of the legislature, in discussing a housing law, will say, "Has any other state a law like that? Do they require the same things?" And we are also indebted to the state that holds its standards. We know the relation of bad housing to tuberculosis and typhoid; we know the relation of bad housing to infant mortality; we have seen, too, the spirit of bitterness in the tenant against the landlord, that grows into anarchy. So it is natural that housing regulation by law should seem more important to us than it does to those who only plan for the poor, but do not visit them.

Still, we cannot understand why all who are interested in social and civic betterment are not somewhat interested in housing. We cannot understand why one does not oftener hear housing mentioned in club programs or in the conferences of social and civic workers. One hears discussions on social uplift, on conservation, education, health, sex hygiene, domestic science; discussions whose aim is not merely self-culture, but the advancement of all society. And, listening in vain for a word on housing, we feel like crying out, "Good people, all those things you talk of are absolutely beyond the reach of thousands of families in our cities, and will be, until their living conditions are changed. Health? When there isn't even a chance for sanitation! Education? What can you teach in the schools that is not blotted out by the degradation and obscenity visualized in the slums and neutralized by the daily lesson heard there? Domestic science? How can people learn about ventilation when they have no windows? How can they learn the way to wash and scrub when they have no water? Sex hygiene? When people are so crowded that they have no room for decency? Conservation? How can we hope for the conservation of the child, without the conservation of the home?"

Yet days are spent in the discussion of these topics, without anyone coming to the point that, "*As the homes are, so the people*

will be." These are the things we have to teach; these are the grounds of our appeal when we ask for housing regulation by law.

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Room Overcrowding and the Lodger Evil

By Lawrence Veiller

Secretary, National Housing Association

Room overcrowding, as we know it in America, is almost entirely wrapped up with the lodger evil. Contrary to the popular impression, the cases of overcrowding due to the large family are so seldom met with as to be negligible. The real evil lies in the practice of taking outsiders into the family life, either as lodgers or boarders; generally single men of their own race. I am led more and more to the conclusion that it is primarily the element of racial solidarity, coupled with the obvious financial advantage and augmented by the lack of proper housing accommodations for the newly arrived single immigrant, that we must regard as the basic factor in our problem of room overcrowding.

We have been told for years that the practice of taking outsiders into the family life is fraught with serious evils to the community; evils of a physical, moral, civic, social, industrial and economic nature. That this is so, I, for one, have no doubt. We should, however, be better equipped for the attack if we had a more certain basis of accurate data at our command. All that we can rely upon, however, is the appeal to reason. From the very nature of things the results of room overcrowding must be of this kind, and the ordinary person at once grants this without the necessity of arraying a series of incontrovertible facts to prove our case.

Where this evil of room overcrowding is entrenched, it must be fought resolutely; where it has just begun to show itself, it should be nipped in the bud. No sentimental plea of the rights of the individual should be tolerated. Let us not be led astray by the argument that the workingman's home is his castle, that its privacy cannot be invaded by officials for inspeccitorial purposes.

We admitted long ago the right of the community to inspect and control both rich and poor in cases of contagious disease, and it is a slavish devotion to dogma that does

not recognize the right of governmental interference where the peril is both moral and physical. Nor should we be influenced either by the plea of poverty and necessity—that the workingman is forced to these conditions, and that, therefore, the evil must be tolerated. Just as surely as it is tolerated, we must face the breaking down of American standards of living, of morality, of civic and social responsibility, of even liberty itself.

* * * * *

My solution for this evil is, that we hold the landlord primarily responsible for the taking in of lodgers into the apartments of families who occupy his building. While it may seem a novel proposition to hold the landlord responsible for something which many people feel he cannot be responsible for, yet it is in reality no new thing. For over ten years now in New York we have held the landlord responsible for the moral character of his tenants, and we have done this most successfully. In the New York Tenement House Law a landlord is responsible, and with a very serious degree of responsibility, for the presence of prostitutes in his tenement house. If such women are found and are not promptly removed from the house upon notice from the public officials, the house itself becomes liable to a penalty of \$1,000—a penalty which cannot be escaped. This provision has proved so admirably adapted to its purpose that in all this time, although there have been many cases of this kind brought, there has been no instance where it was necessary to seek the collection of the penalty or the bringing of court proceedings in order to make the landlord comply with the law. A mere notice has been all that was necessary to save action. He has been quick to dispossess tenants of this character.

What I propose now is that we should apply this same principle to the problem under consideration; that we should prohibit the taking of lodgers and boarders into an apartment without the consent in writing of our health officials, and that we should then hold the owner of the house responsible through heavy penalty for any violation of this provision. Let us not be deceived by any false claims on the part of the landlord that he cannot know what is going on inside the apartments of the individual families in his building. Such a claim is not true. It is his business to know

whether his tenants are taking in sub-tenants; it is his business to so look after his property that he will know what is going on in his house; it is his business—if the house is one of any considerable size—to have on the premises a resident janitor or caretaker, to keep an eye on all of the conditions in that building. The janitor always knows when families are taking in lodgers or boarders. It would be impossible to escape such knowledge. Where the house is merely a small one, and no janitor is provided, the owner himself must act as janitor, but in such houses, as a rule, the lodger evil is not often encountered.

Some may ask, would it not be simpler to prohibit outright the taking of lodgers in a tenement house? Undoubtedly it would be easier, but, unfortunately, it would not be fair or reasonable; nor would such a requirement, in my judgment, stand the test in the courts. To withstand such a test successfully, it would have to be shown in all cases that the practice of taking in lodgers was injurious to the community; the exercise of the police power by the state would have to be justified.

The following provision of law, I would suggest, should be incorporated in all housing laws and also adopted by our health departments as part of their sanitary codes:

No tenement house, nor any part thereof, shall be used for the letting of lodgings, nor shall any person not a member of the family be taken to live within an apartment occupied by any family without the consent in writing of the Department of Health.

With a provision of this kind on our statute books, the methods of administration to be employed would be comparatively simple. From the point of view of the enforcing officials there would be necessary in the first place a very complete notification to the owners of all tenement houses of the new requirements, and a warning that the responsibility now rests upon *them* and that any deviation from the strict letter of the law in this regard would be rigidly punished in future. The health department would also be under the necessity of having initial inspections and measurements made of all rooms in those portions of the city where they expect the evil is most likely to occur, so that they may have on file in their own records, in convenient form, readily accessible, the exact number of adults and children that may be permitted with safety to

occupy each individual suite of rooms. Following this measurement, written notice should be sent to the owner informing him of the maximum number of persons that may be lodged in the individual apartments of his building, and calling his attention to the fact that no persons except those to whom the apartments are let may be taken to live there without the consent in writing of the health department.

Then, from time to time, night inspections would have to be made by the health officers and, where it was found out that lodgers were being taken, court proceedings would have to be instituted against the owner. Presumably it would be wise policy, in the first instance, to warn him and to threaten court proceedings in the next case that occurred in his house; then keep a very close watch upon his property.

So much for our health officials. How would such a plan work with regard to the landlord? What methods would he have to adopt in order to make this plan a success? If he were a wise landlord he would put a clause into the rent receipt which is given each month to the tenant, calling attention to the fact that no one can be taken to live in the individual rooms of that apartment without his consent and without the written consent of the health department; he could also state in his lease that the apartment is rented to this particular family, consisting of so many persons; a method that is now generally employed in the case of high-class apartment houses, in which class of realty the standard lease contains a clause that the apartment shall not be sublet without the landlord's consent. If he were a wise landlord he would also give a similar printed notice to the tenants upon their first moving into the house; thus calling their attention to the limits of the occupancy before they actually move in. He would also cause his janitor to be vigilant and see that no lodgers were taken into the house, nor would he wait for the health officials to discover the presence of this abuse; he would discover it himself and deal with it accordingly. And, finally, if he should receive a notice of violation from the health department, a first warning, he would without the least hesitation dispossess the tenant.

That such a plan is sure of successful administration, there can be little doubt. That such a plan would, if fairly administered, do away with room overcrowding in most

of our cities, I similarly have no doubt. What is required now is that it should be adopted as a basis of practical operation for the future, assuming it commends itself to the judgment of our health officials and our housing workers.

Two points of vital importance must not be lost sight of; one is something that we are apt to forget, namely, that the tenement dweller knows that it is wrong to take in lodgers. The tenant is quite conscious that the taking in of lodgers is against the law; even in many cases where it is not, believing it to be so—and is always careful to conceal the facts so far as he can. This makes the situation helpful; for, in carrying our plans into effect, we shall not have to impose upon the working people requirements which may seem to them new interference with their liberty.

The other vital point is that we cannot succeed in this effort unless we see to it that the community is thoroughly aroused to the evils of room overcrowding and is kept aroused; not only must we educate the general public, but we must give especial attention to the education of our minor courts. The judges before whom cases of this kind must go must be made to see at first hand the serious consequences of this evil. Excursions must be arranged by which they can accompany the sanitary officers on their midnight inspections and can see for themselves the conditions which prevail. Through conference with social workers and prominent citizens, they must be made to realize the strong public sentiment in the community for the doing away with these evils.

If we are to do away with the lodger evil, our remedies must be twofold, repressive and constructive. We must not only make impossible by law the taking of lodgers into the family life, but we must recognize that there is need of some place in which the large number of single men that come to our shores—single so far as we are concerned; that is, men without families in this country—can be cheaply lodged. We must recognize, too, the necessity of their being lodged near their fellow countrymen, so that they may be near people that speak their language and who have common interests.

This means, therefore, that in our large cities, where there is a considerable alien population, we must carefully find out the

facts as to the need of housing accommodations for single laborers of this kind, and see to it that lodging houses of the very best type are provided for their accommodation, placing one of these in each alien center and not attempting to house the various races in the same house. They will not mix, so do not let us attempt it, but let us rather build a lodging house for Italians in the Italian quarter of our cities; similarly, a lodging house for Poles in the Polish quarter of the city.

Here there is great opportunity for our philanthropists. It is pioneer work; the ground has to be broken from the very beginning. We have yet to learn what is the best type of lodging house to build, the whole question still is to be studied in all its aspects.

I have every confidence that with the adoption of these plans room overcrowding will in the course of a few years cease to be a factor in America's housing problem. But this result cannot be accomplished unless we set ourselves resolutely to work. What is needed is not discussion but action. The way to begin is to begin, and the time to begin is now.



Health Departments and Housing

By Charles B. Ball

Chief Sanitary Inspector, Department of Health,
Chicago

Bad Housing consists in "Houses that are

- (a) Poorly lighted,
- (b) Unventilated,
- (c) Damp,
- (d) Imperfectly drained,
- (e) Exposed to undue fire peril,
- (f) In bad repair,
- (g) Vermin infested,
- (h) Disease infected,
- (i) With uncleanly surroundings,
- (j) With insufficient water supply,
- (k) Without toilet accommodations adequate for comfort, cleanliness and privacy,
- (l) With defective plumbing,
- (m) With overcrowded rooms, and
- (n) With cellar tenements. [Lovejoy.]

Such houses are "Dangerous to moral and physical health, social and personal," and *increase*

- (a) Industrial inefficiency,
- (b) Inebriety,
- (c) Dependence,
- (d) Poverty,
- (e) Disease,

- (f) Death,
- (g) Juvenile delinquency,
- (h) Debased citizenship,
- (i) Vice and crime,
- (j) Degeneracy of race.

The prevention and cure of bad housing conditions must proceed along three lines:

I.—Every *new* dwelling and tenement must be constructed so as to afford suitable living accommodations;

II.—Every *old* house not now fit for habitation must either be demolished or improved so as to be fit;

III.—*All* habitations, new and old, must be maintained in good repair and sanitary condition.

Standards for new houses depend upon the application of physical laws and hygienic principles. Standards for window design and courts upon which windows open depend upon the physical laws which govern the transmission and absorption of light and our observation of the actual illumination produced. At present such standards are empirical and practical rather than scientific.

The time has come when provisions now in effect with respect to tenements should be applied also to habitable rooms in other classes of buildings. The health officer should be able to demonstrate the advantages which result from standards of this nature. He may be sure that no effort in housing advance is so sure of lasting reward as the successful expression of worthy standards in new habitations.

The Demolition of Unfit Dwellings.—Slovenly shacks and ramshackle shanties, tumble-down sheds and tottering stables, dwellings in disreputable disrepair "shame stained and bearing the nauseous odors of decay," deface our cities to an unnecessary extent. The health authorities who realize the nuisances that must result from the existence of such structures may and must take the initiative in community movement for their destruction.

The total number of buildings razed in Boston during the past eleven years is 1,138. The Board for the Condemnation of Unsanitary Dwellings in Washington, D. C., has, since 1907, torn down 1,503 houses unfit for habitation.

The improvement of a house unfit for habitation mainly consists in structural changes in the building and its plumbing and drainage equipment. Such changes will

often be resisted by the owner. To enforce laws against such opposition the converging efforts of building, legal and health authorities are required.

The cooperation of health officials is required in the keeping of both old and new houses fit for habitation. Their function is the practice of practical sanitation and instruction to tenant, owner and agent. This means tactful, tireless enforcement of laws which prohibit overcrowding, unclean accumulations, the presence of horses, pigs and goats, the occupation of unfit cellars and attics, as well as the affirmative requirements that the house and appurtenances, especially plumbing and drainage, shall be kept clean and in good repair. The means for accomplishing these results consist in

- (a) An adequate inspection service acting upon its own initiative as well as upon complaints,
- (b) A sufficient office force,
- (c) An individual record for each house.

These tools of administration must be supported by prompt court action upheld in turn by sympathetic public opinion.

A Trained Inspection Force.—The best means of selection (civil service examinations) will give only untrained inspectors. A school of training must cover.

- (a) The purpose and history of housing reform,
- (b) General duties of inspectors,
- (c) The laws to be enforced,
- (d) The methods of making records, etc.

A graded force will consist of chief inspector, deputy chief, supervising, verification, special and district inspectors, including some women.

The Office Force will consist of the chief clerk, correspondence and reviewing clerks, complaint clerks, file and personnel clerks and stenographers.

Card reports made in the field represent the principal sources of record. Special records should be made for basements, overcrowding, new buildings, etc.

Periodical House to House Inspection.—There is no city of 100,000 or more population, and probably none of 50,000, which does not contain a few blocks at least where the housing conditions will never be cured by occasional piece-meal application of any remedy. It will do to treat these cases by the time-honored but antiquated method of inspection on complaint.

Authority of law must be had for posting

on the walls and entrances of suspected premises a permanent placard stating the maximum number of persons who may lawfully occupy the room in question, and the penalty which is to be incurred for crowding.

The increased incidence of contagious diseases due to close contact of the members of a family in low, small, crowded, ill-ventilated and dirty rooms cannot be estimated. Isolation, cleanliness and uncontaminated food are impossible for the family living in a congested tenement home.

The Abolition of the Privy Vault and Outdoor Toilets.—If health departments do not cry aloud against this ancient evil, not of the congested city alone, but of the sparsely settled neighborhoods, little protest will be heard from other officials or the residents. Hygiene, decency and convenience alike demand the abolition of the privy vault and its next of kin, the outdoor water closet.

A Statistical Basis of Action.—A service to housing reform, which must be rendered by health departments, if performed at all, is the collection and tabulation of statistical proof that a bad house is a menace. Let us determine the relative mortality of infants born in tenement rooms and those born in good houses. Let us show the deviation from normal standards of the little children in overcrowded homes. Let us compare the relative size, weight and strength of children reaching the legal age of employment from people belonging in crowded blocks with others in uncrowded neighborhoods. Let us tabulate the prevalence of filth diseases in families in tenements and those living in single houses. Let us count the deaths in hovels and compare them with the deaths in decent homes, if we would learn the possibilities of long life for all men.

Reports and bulletins are now issued by 35 state boards of health and 70 city health officials. It is common to put forth special bulletins devoted to a single subject, as tuberculosis, small pox, etc., but such bulletins on housing are lacking.

Limitations of Health Activities Caused by Weak Laws and Small Appropriations.—It will be said that some things I have named as desirable are impossible because of two limitations of their efforts:

- 1st. Lack of legal powers.
- 2d. Limited appropriations.

Most health laws are framed on the theory that no steps can be taken to anticipate and head off disease, but that action can only be taken to cure existing evils after they have become fully developed. The speed of advance will depend upon the urgency with which health authorities advocate the importance of changes upon reluctant law makers and prosecutors.

The increase of health provisions from twenty or thirty cents per capita to one dollar will come only after public opinion is aroused to a due appreciation of the economy which will result from preventive

measures. Health officers can forward this movement to some degree, but this advance will mainly depend upon other classes of workers represented in this conference.

I picture in my mind a city in which the child, yet unborn, will feel in its being the stimulus of sunshine and fresh air; in which the babe will be born into a house fit to receive the gift of heaven; in which the child will never know the burden of the slum, but through normal development will come to manhood ready joyfully to do his share in the work of the world and qualify to assume a worthy citizenship.

A Dumping-Place Which Became a City Park

By Frank Bradfield

President, Park Board, Enid, Okla.

HOW a rough, unsightly waste of land can be transformed into a spot of beauty is well illustrated in the establishment and arrangement of Spring Park, Enid, Okla.

When the site of the city of Enid was platted by the Interior Department, prior to the opening of the northern portion of Oklahoma Territory to settlement, the government reserved a ten-acre tract of rough, gully-cut, unsightly land lying six blocks from the business section of the city. Later this land was deeded to the city, and for a decade it was a convenient dumping-place for the tin cans and other refuse of the surrounding neighborhood.

Two years ago an agitation was started to make a park out of this unkempt acreage, and there were titters among the wise folk who thought a park was made by putting a fence around a tract of land and planting it to grass. Others saw farther ahead, however, and the city's Park Board, which is composed of men who know the value of parks and how to establish them, authorized Mr. S. H. Allen to prepare plans for laying out and beautifying the grounds.

The estimate furnished with the plans made evident the fact that the improvement work could not be done with the funds then at the disposal of the Park Board. The

Board prevailed upon the city commissioners to call an election to vote bonds to the amount of \$10,000 for park improvement. The money from the sale of the bonds became available in November, 1911, and the work of transformation began.

Excavation turned a ravine into a charming little lagoon, across which an artistic cement bridge was constructed. The banks were leveled back for some distance, gravel walks were made, and retaining walls were placed at the foot of the banks. Shrubs and flowers were planted, trees were trimmed, and grass was made to grow quickly beneath them.

The rough bluff on one side of the lagoon was broken by terraced steps of cement, on which the people could sit and enjoy cool breezes while listening to the band playing on the opposite side. Ornate electric lights at intervals along the banks of the lagoon and the walks supplied sufficient light at night, while pretty canoes glided back and forth under the bridge. A wading pool was created, with a sandy bottom and wide, sandy beaches, where the little ones can wade to their heart's content or play in the clean sand.

Away back before the advent of the white man in this portion of Oklahoma, the mineral springs which bubble up through



THE DUMPING-GROUND IN ENID, OKLA., THAT BECAME A PARK



SPRING PARK, ENID, OKLA., SUCCESSOR TO THE DUMPING-GROUND

the sand were eagerly sought by many afflicted ones because of their healing properties. These springs—five of them—have been cemented in, made sanitary and convenient of access, and their overflow provides fresh water to the lagoon. Almost any evening in the summer, and not infrequently in winter, thousands of persons can be seen carrying their water bottles and

jugs to these springs to fill them with the much-prized mineral water.

To-day there is hardly a more beautiful sight in the great Southwest than Spring Park, and what we hid from the sight of the friendly stranger and visitor to our city in years gone by we now point to with satisfaction and pride as one of the chief assets of the city.

A Year of Civic Work in Minneapolis

LAST month the Minneapolis Civic and Commerce Association completed the first year of its existence, the organization having been formed on December 9, 1911, as a consolidation of the Publicity Club, the Minneapolis Traffic Association and the Public Affairs Committee of the Commercial Club.

The new organization has a membership of over 2,000. It is divided into three main divisions—Civic, Industrial and Traffic—its varied activities being handled by some thirty or more committees. These include among others:

| | |
|--------------------------|--------------------------|
| Benevolent Associations. | Membership. |
| Bureau of Advice. | Municipal. |
| Bridges and Viaducts. | Northwest Development. |
| Child Welfare. | Public Comfort Stations. |
| Convention. | Public Health. |
| Entertainment and | Retail Trade. |
| Program. | River Development. |
| Executive. | Smoke Prevention. |
| Finance. | Streets. |
| Fire Prevention. | Taxation. |
| Industrial Development. | Terminal Facilities. |
| Legislative. | Trade Extension. |

The year's record of civic and municipal betterment work has been a notable one. The following brief outline of some of these activities may prove helpful in other communities not yet so thoroughly organized for similar work.

The Smoke Abatement Committee, through the employment and supervision of an inspector, has abated the smoke nuisance in a remarkable degree. The inspector made 770 visits and compiled 385 charts, showing violations of the smoke ordinance. Twenty-one flagrant violators were arrested and fined; sixty-six of the worst offenders have either eliminated the nuisance entirely or have materially improved conditions. Requests are continually being made by plant owners for services of the inspector for consultation as to the best method of improving conditions. Advice

to plant owners as to proper fuel, automatic stokers, and improvement of furnace plants is continually being given. The smoke nuisance has been materially and strikingly reduced. The municipality expects to continue the employment of the inspector next year.

The Committee on Paving and Bridges, after an extensive investigation, recommended to the council the immediate construction of a bridge of artistic design and monumental character across the Mississippi River at Third Avenue. It secured the coöperation of the City Council Committee on Bridges, of the local newspapers and other civic organizations in emphasizing the importance of a proper structure at this point as a precedent for future city construction. As a result the Council has let a contract for a monumental bridge to an engineering firm of high standing, in accordance with recommendations of this committee. The committee has completed a preliminary investigation for regulating the height of buildings and will be prepared to submit an ordinance during the coming winter. The committee has made an investigation with reference to the laying of conduits and wires in streets before the laying of pavements, and has also been studying various methods of paving repairs with reference to systematizing these methods.

The Street Lighting Committee supported and assisted in the work of installing ornamental lights on Cedar and Washington Avenues South. It assisted also in preliminary work of installing lights on South Third Street, and has furnished information to several cities about to install lights, recommending the Minneapolis standard.

The Committee on Fire Prevention issued a circular calling attention to Annual Fire Prevention Day and giving specific instruc-

tions for use by business houses and householders in reducing fire risk. The committee is now preparing an ordinance for the reduction of fire risk in certain directions which, if passed, will result in lower insurance rates.

The Committee on Taxation obtained reassessment in a district of the city occupied largely by working people, resulting in reduction of 16 per cent in assessments. In another district the assessment on certain properties was increased over 600 per cent, the increase being agreed to by property owners.

The Committee on Public Health, with the coöperation of the Woman's Club, secured two public health experts to make a study of health conditions and methods in Minneapolis. The report will be presented at a public meeting and will be made the basis for a constructive health program for Minneapolis. The committee coöperated in securing an allowance for additional nurses in the Health Department, for increased medical inspection in public schools, and for more adequate hospital facilities.

The Committee on Streets secured pictures and facts with reference to the use of street waste cans in other cities, and has designed a model artistic waste can which it is hoped to make the standard for Minneapolis. A sub-committee is now working on a plan for systematizing street sprinkling and flushing. This committee recommended the immediate expenditure of money for installation of street signs in

outlying districts, and the contract for signs was promptly let. This committee secured the coöperation of the street commissioner in providing especially early cleaning of downtown streets on Monday mornings, and the more liberal use of calcium chloride for laying dust on the streets in the early spring. An investigation was made of methods adopted in other cities for eliminating the screeching of car wheels on the application of brakes. As a result, a device

for abating this nuisance has already been made on over one hundred cars of the Twin City Rapid Transit Company. The further installation of the device is planned for.

The Committee on Highways completed an extensive census among farmers showing the enormous loss bad roads bring to them and to the business interests of the city. It engaged the services of a highway engineer to demonstrate the value of the road drag for maintaining unpaved streets. Six important arterial highways were used in demonstration, resulting in a marked improvement in the condition of these highways. The committee has encouraged the use of the drag among street commissioners, so that now thirty-

seven are in use, as compared with only one a year ago. The committee is now engaged in preparing a comprehensive program for the improvement of arterial streets during the next five years. It has under consideration also a standard uniform width for arterial streets.

Minneapolis
Civic & Commerce
Association

Bulletin



At a meeting of the Bridges and Viaducts Committee, during which the members had inquired minutely into every feature of the plans for the proposed Third Avenue bridge, William Mueser, expert engineer of the company which submitted the designs, volunteered the following statement: "Our company is delighted to find citizens not officially connected with the municipal government, showing such a wholesome interest in a project of this magnitude. It bespeaks a healthy condition of affairs. It insures fair play for our firm and for the council and protects the public. Too many communities leave everything to overburdened officials and come forward with advice and criticism only when it is too late to apply remedies. I say success to the Association, and may its kind multiply."

Number 4.

Dec. 4, 1912

FIRST PAGE OF ONE OF THE ASSOCIATION'S BULLETINS

This eight-page publication, issued every few weeks, keeps the members informed of the work of the committees. The quotation on this cover shows the harmonious and effective way in which the committees coöperate with the local government and with the manufacturers and engineers with whom the city does business.

What to Do and How to Do It

A Series of Twelve Articles to Run Through 1913, of which This is No. 1

How to Organize for Civic Work

By Richard B. Watrous

Secretary American Civic Association, Washington, D. C.

IN these days of quickened and enlightened public conscience, there is an almost universal desire to proceed, in the solution of civic problems, under the headway and force of organized action. No city is so large and no town so small that it does not have need of, and opportunities for, improved structural and administrative development. In all these communities there are individuals willing and anxious to perform public service, but hesitating to undertake it single-handed and alone. They realize the importance of securing a coöperative action that shall carry with it weight enough to effect desired ends, through either the body politic or voluntary agencies, and are seeking ways and means to effect such coöperation.

In many instances the "How to Proceed" seems almost a larger problem than the other specific things desired; and, not infrequently, because this first problem blocks the way, things that ought to be done and can easily be done are left undone. The purpose of this paper is to suggest in a quite simple and practical manner a few methods of procedure that will provide the machinery, through organization, for carrying on definite lines of work. The individual is the unit—some zealous and intelligent man or woman who has had an opportunity to observe what has been accomplished in other communities, and who is earnestly impressed with the importance to his or her own community of similar organized action. Most large cities, nowadays, possess well-managed boards of trade, commercial clubs, or other societies of business men that are doing excellent service in certain lines. These same cities have women's clubs, and most small towns that do not have the business organizations have the latter. And yet, without danger-

ous multiplicity of organizations, there has sprung up a quite legitimate demand for what are now quite generally known as Civic Leagues, composed of both men and women, and aiming to do a service that is hardly within the purposes of either the distinctly business organization or the women's club. And so we would make this new agency for united effort the "Civic League."

Getting Together to Talk Things Over

With some one or more definite objects in view, the development of such a league ought not to be a difficult matter. Of course, there must be an object for organization. That, at the start, may seem vague, and yet the desire for a league must have back of it the desire to achieve certain things. It may be that the city or town has done little for its physical upbuilding. It needs a cleaning up—to be followed by a habit of being clean. Perhaps it is clean but has not taken on any of what some call the adornments, but which are, in fact, very essential factors of community life. There may be no parks, no boulevards, no playgrounds, no systematic tree planting, no school gardens, no market places, no civic centers, no plan for comprehensive development. All are to be desired. Possibly only one or two of these several undertakings loom up clearly at first. But any of them is enough to afford an excuse for getting together and "talking things over." And that is step number one. This first step may well be taken at the home of the originator of the idea, who calls together a few friends he thinks may feel as he does—that it is necessary to do something to make his town a better place in which to live. He will proceed with care in this initial invitation. Preferably he might make it a dinner affair, for around a dinner table

many most excellent plans are evolved that result in large achievements. At that meeting should be presented, first, the need of improving things in general, or some few things in particular, and second, the value of a society which can direct a movement that will wake the community from lethargy to energy. If such a preliminary meeting is well managed, it will decide before adjournment to call a larger meeting to consider definitely the organization of a Civic League, the initial name of which shall be the name of the city or town, or section of the city or town, in which it is organized—for instance, the Washington Civic League, or the Forest Hill Civic League, or the Fourth Ward Civic League.

Now should follow some carefully planned work on the part of the few who attended the first, or home, meeting. Before the larger meeting is called there should be other little conferences where shall be considered the names of those who ought to be especially invited to attend. These should include the mayor and other city or town officers who are known to be interested in the best growth of the community; the president of the commercial organization and the presidents of other clubs having as a part of their work that of community betterment. These should be invited by personal visitation and an explanation of the object of the meeting. Men and women prominent in the community, either because of their profession, or business, or their zeal for the public welfare should be given the same personal invitation. Up to this point the date and place of the meeting may not have been determined, though they will have been discussed informally.

Arranging for the Organization Meeting

The date is a simple matter, except that care should be taken to select a night not likely to be otherwise engaged by many whose presence is sought. The best place of meeting is a more important consideration. It is not likely that it can be conveniently held at a private home, though such practice has been known to be successful, particularly if the home is a large one, conveniently located and a quite natural social center. But if not at a home, the meeting might be held at the city hall—if the mayor is cordial and the hall is a good one—or at the headquarters of a sympa-

thetically inclined commercial organization. A church may very properly be designated if the minister and his members are interested, and if it is made clear that the new organization is not to be a denominational affair—for in this instance we are not dealing with the denominational civic society, excellent as many of them are. A Y. M. C. A. building is almost always available and acceptable. One of the best places, however, is a school house, for the public school is becoming more and more the recognized forum of public affairs. So, in recognition of this larger use of the school house, let this formal meeting be at some school. The school superintendent, the principal and the school board will, of course, be interested. The date and place determined, there should be prepared a printed or typewritten invitation with a brief statement of the purpose of the meeting and what it is proposed the new organization shall do for the community. Especial care should be taken, in advance, to enlist the coöperation of the local newspapers, in both their news and editorial departments. It is always wise to call upon the editors, explaining to them in detail the plan of organization, and securing their cordial support. It is seldom that such support is not graciously and generously granted.

Now *talk* your meeting—you who are the steering committee—for you want this first real meeting to be a well attended and enthusiastic one. Just to make sure that you get certain people that you want, call them up on the telephone the day of the meeting, reminding them of their engagement with you that evening. All these little steps yield good returns. And when that evening comes, be on hand early with a pleasant greeting for the invited ones that come at the appointed hour.

It is essential that just the right man call the meeting to order and explain the purpose for which it was called. Much depends upon the presiding officer. That is a detail that should be prearranged. If the mayor or the board of trade president has been one of the inner group, and is a forceful speaker and deeply interested, it would be well to select either of them to preside. If not, it is better to let the prime mover of the project preside. Following, or prior to, his address, a temporary secretary should be chosen, and again he should have been

selected in advance. After the chairman's address, it is well to call for remarks by those in attendance and among the responses should be several by men and women who have been asked to speak.

Let us assume that there is in the town or city a sadly neglected waterfront that has been used for a dumping ground for debris and that might to great advantage be used for park and boulevard purposes. Direct the talk to the "bad housekeeping" of letting such shiftless use of the area continue; to the dangers to health, and to the value to the city that would follow its recovery and transformation into a park. Let some real estate man tell of the enhancement of values of neighboring property that would follow the creation of a park; let a doctor tell what would be accomplished for the public health; let a business man tell of the new impression that would be made upon visitors and prospective investors of capital; let a minister or a Y. M. C. A. secretary tell of the good effect upon public morals that follows a demonstration of civic cleanliness and orderliness.

The same general procedure may be followed if such subjects as Trees, Playgrounds, School Gardens, or City Planning are to be considered. The point is, to bring out enthusiasm for work, and, in each talk, an endorsement to organize a civic league.

Effecting a Permanent Organization

If the tenor of the meeting is strongly in favor of prompt action, it is wise to take advantage of the enthusiasm and attendance by proceeding to organize at once. A constitution and by-laws may have been prepared and be submitted for immediate consideration and adoption. That instrument should be brief and designed to allow latitude in the conduct of the business of the organization. Its objects may be briefly stated as, "being for the general benefit of the community." It should provide for the usual officers, including a president, one or two vice-presidents, a secretary and a treasurer; and for regular committees, such as the usual Membership, Finance, Program and several "working" committees, such as Parks and Playgrounds, River Improvement, Public Comfort, Billboard and Smoke Nuisances, Streets and Alleys, Public Health, etc. Particular mention is made of the last proposed committees, as they open the way for participation by many

members. The selection of the committee chairmen is important, and, if the organization is effected at this first meeting and officers are elected, may well be deferred until the new president can make the best selections. A quite satisfactory method of filling the rest of the committees is to let each chairman choose his associates, with the approval of the president and the Executive Board. This Executive Board should consist of the officers and the chairmen of the several committees.

An annual meeting should be designated and other stated meetings as may be deemed wise, possibly one every three months. The Executive Board should meet once a month, or oftener on the call of the president.

The amount of dues to be charged depends upon the localities. To secure a large membership a quite low amount should be named—say fifty cents or a dollar a year for members, but providing for a sustaining or contributing class at five or ten dollars a year, and donors in larger amounts.

If the advance work has been carefully conducted, the election of officers will quite naturally result in the selection of those who are best qualified to serve, for the steering committee will have canvassed these matters and be ready to make the nominations from the floor, or to call for the appointment of a nominating committee who may retire and make a report. On the presentation of the report a simple procedure is for some one to move that the report be accepted and that the secretary be instructed to cast a unanimous ballot for the election of the nominees. In the selection of officers it is advisable to have both men and women chosen. Perhaps it may be a woman who is best fitted for the presidency. If so, don't fail to make her president. As a rule, it is well to select a man, preferably a banker, for treasurer.

These simple details are mentioned, not to recommend political machinery, but to expedite organization. If there are to be contests over officers and details of the constitution, let them follow in later years. If, however, the association is well managed, such contests will never arise.

So much for getting ready for business. To other authorities are left proposals for specific labors after organization. Mention should be made in closing that there are national associations prepared and glad to advise on many details of organization and

procedure. Because I have imagined a league that would assume civic improvement work in particular, it is perhaps in order to refer particularly to one national association that may be very helpful—the American Civic Association, of which the writer is secretary, with offices at 914 Union Trust Building, Washington, D. C. The American Civic Association prints helpful pamphlets and bulletins on many phases of civic improvement; it has copies of model constitutions, and, in its files, records of

marked accomplishments by civic leagues and other societies in all parts of the United States and Canada. It was organized and is maintained to be helpful to those carrying on civic work. One service it can render is to suggest speakers on a variety of subjects, who might be invited to address new organizations, when they are ready, as they should some day be, to call in outside speakers or advisers to address general meetings.

City Planning News and Notes

Results of San Francisco's Charter Amendment Election

Of thirty-seven amendments to the charter of the city of San Francisco, submitted to popular vote on December 10, only seventeen were adopted. Two of those approved had special reference to city planning. One of them provides that the Board of Supervisors may establish by ordinance a city planning commission to devise plans for the improvement and beautification of the city, the members of the commission to receive no compensation. The other authorizes the Board of Supervisors to acquire and exchange parcels of land for civic center purposes, and authorizes the erection of an auditorium, library, opera house, state building and other structures in the civic center.

Other amendments adopted which will have some bearing on city planning provided methods for the opening, widening and closing of streets and the construction of tunnels and subways on the district assessment plan.

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The American Institute of Architects to Collect Town Planning Data and Illustrations

An important feature of the forty-sixth annual convention of the American Institute of Architects, held in Washington last month, was the report of the Committee on Town Planning. Arnold W. Brunner, of New York, is chairman, the other members being H. V. B. Magonigle, of New

York; W. R. B. Willcox, of Seattle; C. L. Borie, Jr., of Philadelphia; J. R. Coolidge, Jr., of Boston, and Glenn Brown, of Washington, D. C.

The report called attention to the continued interest and growing appreciation of the value of town planning throughout the United States, and to the need felt by architects for documents and pictures relating to this subject. The following recommendations were made by the committee:

"We suggest that the American Institute of Architects enlarge its present collection of lantern slides and procure views of the best examples in Europe and America. Many pictures can be obtained showing suburban development and garden cities, also views of civic centers, street intersections, settings for buildings, water fronts, railroad terminals and similar subjects illustrating problems connected with city planning. These might be loaned to members of the Institute to assist them in their work, or copies might be made at a nominal cost and sold to those interested.

"It is most desirable that some central library should collect plans of important cities, properly drawn to scale, and there is much detailed information that is constantly required. Undoubtedly the possession of this library would be of great value to our members, and it seems to your committee that the American Institute of Architects should take immediate steps to collect maps and documents which would form the nucleus of such a library. We believe that the cost might be met by private subscription. The value of this can hardly be overestimated. The cost of additional lantern slides is easily within our means, and would be a very great service to members who wish to deliver lectures on city planning, but we strongly urge the foundation of a real reference library on city planning."

As a result of this report, the suggestion for an increase in the Institute's collection of lantern slides was approved by the convention, and it was also resolved that the Committee be continued with instructions to report, as soon as possible, specific ways and means to the Board of Directors for the starting of a collection of material illustrative of town planning problems.



A Competition for a Scheme of Development for a Quarter Section of City Land

The City Club of Chicago is preparing to hold a housing exhibition at its club building, beginning March 7, 1913. As a constructive feature of this exhibition, it is desired to display plans showing how areas in Chicago now unoccupied may best be improved for residence purposes. With the coöperation of the Illinois Chapter of the American Institute of Architects, a program has been drawn up, addressed particularly to building and landscape architects, engineers and sociologists, for a competition for plans for laying out a typical area in the outskirts of the city. Mr. Alfred L. Baker, President of the City Club, has offered \$600 for prizes for such plans.

The object of this competition is to extend information and awaken increased interest in the essentials of good housing in its broadest sense, the best methods of subdivision of residential land, the best disposition of space for parks and recreation centers, the most practical width and arrangement of roads, the most convenient location of stores and of public or semi-public grounds and buildings, the most desirable provisions for house yards and gardens and the proper density of population to be provided for. Further details may be secured of George E. Hooker, Civic Secretary of the Club.



A Stirring Scene in Los Angeles

There was a very stirring scene in the City Council Chamber at Los Angeles on October 22nd. Some years ago, when Charles Mulford Robinson, of Rochester, N. Y., made a plan for Los Angeles, he developed as one of its principal features an educational and cultural center on the Normal School Hill. This is a low hill in the very heart of Los Angeles, which is now crowned by an ugly red brick Normal School. Mr. Robinson foresaw the time

when it would be wise to move the school to a more spacious and less costly site, and he proposed that when that time came the city of Los Angeles should buy the hill, and build upon it the Art Gallery and Public Library, of which it was already talking. The time has come sooner than many persons anticipated. Last winter the Trustees of the Normal School offered the site for sale at \$600,000. Mr. Robinson, who was in Colorado Springs, was summoned by telegram to Los Angeles to help the fight for the acquirement of the hill by the city.

The campaign was full of picturesque and dramatic features; but the upshot of it was that when the City Council declared, probably with entire truth, that the city was already committed to projects involving so much expense that no money was available for such a purchase, a group of bankers came forward and offered to buy the hill on behalf of the city, and hold it until the city could reimburse them. At last, in the summer, this contract was ratified. By its terms the city was to make a payment of \$10,000 before November 1st. About the middle of October, it began to be reported that the Council had decided not to make this payment. Several councilmen were quoted as saying that they would vote against it. On October 22nd, when the matter was to come up for vote, two hundred club women and many men crowded the council hall. They were fully organized, determined and in such earnestness that when the roll was called the vote stood six to two in favor of the contract. Within the hour, before the club women left the building, the Mayor and City Clerk had affixed their signatures to the warrant.



An Official Plan for Edmonton and Adjacent Territory

An official plan which will cover not only the entire city, but also the adjacent territory, is to be adopted by the municipality of Edmonton, capital of the province of Alberta. The work has been entrusted by the City Commissioners and the City Council to Morell & Nichols, landscape architects and engineers, of Minneapolis. A preliminary report, accompanied by maps and plans, has already been submitted. These have been approved by the city, and at a recent meeting the completion of the final maps, plans and report was authorized.



TOWN & VILLAGE

The Opportunity of the Country Village

A New Department in Which Special Attention Will Be Given to Municipal and Civic Problems in Communities of Less than 5,000 Inhabitants.

By Frank A. Waugh

Professor of Landscape Gardening, Massachusetts Agricultural College

WE hear a great deal these days about city planning. The public prints and the public rostrums are full of it. In some places work is actually being done. Under the guidance of a commission of eminent artists, Washington takes the lead; Chicago follows with its sumptuous Burnham plan; Seattle has a plan both detailed and comprehensive, which, unfortunately, she failed to adopt at a recent election. A national city-planning congress meets annually to discuss civic art and ways and means. All fine, but it doesn't go as far as we should like. The planning of big cities is not enough. What shall be done for Hambridge, with its population of twenty thousand, or for North Compton, with only three hundred souls? Has civic art nothing to offer these communities?

Community Planning

Of course it has. The defect is not with civic art, but with the civic artists. And not with them, exactly, either, but with the conditions under which they labor. The eminent architects and landscape gardeners who are doing so much for the big cities choose these subjects of study less from a special love of the big cities than from the necessity of serving clients who can pay a living fee. The metropolitan centers are wealthy; they can hire the best landscape architects; they can employ the best city engineers and park superintendents (that is, when there is not too much political graft in the city government). The small cities and the villages have not yet come to the point of feeling that they can afford so much high-priced professional advice.

But civic art, or the art of planning for communities, is a universal art and knows no distinctions based on the census. It would make every community beautiful—beautiful, sanitary and convenient. The principles of community planning apply just the same to Hambridge as to Chicago; just as well to Nasby's Crossroads as to Paris.

Differences in Application

The principles of art are always the same, but there are differences in application. The city planners talk a great deal about the width of streets. It would seem that a country town would hardly need such wide streets as a big city. Yet, as a matter of fact, almost every prairie city, from Buffalo to Denver, whether its population is five hundred or fifty thousand, has its streets wider than Broadway, New York, or Washington Street, Boston—usually wider than Market Street, Philadelphia, or State Street, Chicago. Not only are the main streets of prairie towns wider than would be necessary in the shopping center of a big metropolis, but all the rest of the streets are equally wide.

This is a great waste of land and of paving, and an extra annual expense in maintenance. Civic art would suggest narrower streets, on the principle that the width of each street should be carefully adjusted to the traffic it has to carry. The city planners also talk a great deal about open spaces; the small town needs open spaces, too, though of a different character from those of the city. The New England village common is a very different affair from Madison Square, New York, or the Paseo in

Kansas City, but it is quite as serviceable in its way. The big cities are striving to secure playgrounds, but boys and girls in small cities must play, too; and there is no place provided. Civic art demands parks for the metropolitan districts; but the little cities, and even the smallest country towns, need trees and grass and pleasant scenery within public reach. Unfortunately the little town cannot have a park system designed by a high-priced landscape gardener and administered by a well-trained superintendent. There must be other ways of providing these highly necessary graces for the smaller communities.

Some Practical Methods

Fortunately it is possible to point out perfectly feasible and well-tried methods of securing these results. What is chiefly wanted is some local force to direct public sentiment and to secure such expert assistance as may be needed from time to time. One of the best local agencies for this kind of public service is the women's club. The efficiency of this type of organization has been proved over and over again. Many women's clubs have begun by studying local history. This stimulates an interest in local affairs. Out of this interest grows a local pride; patriotism grows out of pride, and a genuine zeal for public service follows hard after patriotism.

Thus, everywhere women's clubs are laying aside the futile study of Art, meaning the works of Botticelli and Leonardo da Vinci, and are entering heart and soul into the practice of civic art, meaning clean streets and attractive school grounds at home. The women's club may take the initiative in this work of community planning if no other leadership is available, or it may act with other local societies, or it may organize or galvanize or coöperate with a village improvement society.

Village Improvement

The unique type of village organization definitely designed for village service and carefully adapted to village needs is the village improvement society. Naturally, this is of New England origin, and is most popular in its native land. This form of society, however, has proved so useful that it has been adopted even in some of the "cities" of the Middle West and Rocky Mountain states. It is a form of organiza-

tion greatly to be encouraged, though it should never be introduced into any community where it will mean merely one more club in a town already clubbed to death.

This kind of work has certain great advantages, aside from the superior adaptation of the form of organization. The work is concrete. Every man, woman and child can be given something to do. The propaganda does not spend itself in windy talk about civic ideals and social reform. For this reason it offers the very best opportunity for training a neighborhood in neighborly coöperation. A well-managed local improvement society will also teach its members another lesson of great value, viz., the uses of expert advice. Such help is usually neglected in America, and in small towns probably more than anywhere else. But the village improvement society will engage a landscape architect to direct the plans for town beautification; it will secure a real highway engineer to look after the roads; it will have someone who knows plan the new sewer system; and when Mr. Carnegie gives them a library they will see that it is designed by a competent architect instead of by the village carpenter.

Social Readjustments

Civic reform begins most easily and builds most safely on the basis of concrete public property, such as streets and public buildings. This is why civic art is its most available field. But it ought to go further. There are social improvements to be made as well as material improvements. In this field, too, the small city and the country town meet their own peculiar problems and ought to find their own appropriate solutions. It is not wise merely to adopt a big-city solution. The schools need improvement, but it is quite as likely that they may be improved by more rural freedom and simplification as by more metropolitan complication. A good local library needs to be built up, but it should not be a scientific research library, a big legislative library, nor a legal and medical library. The collection of books should answer in the closest degree to the local needs, the object being not to get the biggest collection of books on the shelves, but the largest circulation off the shelves. The churches need attention. Everywhere they need federation. Coöperation must take the place of competition. Sectarian rivalry in the past has been

the curse of most small cities and towns. In many places this new coöperation ought to go the length of consolidation; and anyone who knows how hard it is to consolidate two churches will realize that here is a problem worthy of any civic leader's mettle. Leading a shirtwaist makers' strike or organizing a suffrage parade in the big city is a schoolgirl's lark by comparison.

The fact is that practically all small communities are socially over-organized. There are too many churches, too many lodges, too many clubs, too many committees, too many petty offices. It may be laid down as a perfectly safe principle of social reform, applicable particularly to small communities, that progress lies in the direction of simplification. "The simple life" is a genuine desideratum in the social world.

Industrial Opportunities

The little cities and country towns may well be proud of themselves and take courage. It is not necessary nor even best for them to grow up into big centers of trade and politics and graft in order to be happy. Let them lay aside such ambitions. It is a great shame that so many of them are trying to be bigger when they are so demonstrably better off as they are. Even in the matter of mere business the smaller places have their own substantial advantages. It is a very significant fact that many of the important manufacturing enterprises of the time are removing from the metropolitan districts to the country. Very few persons who have not studied the matter realize how far this movement has already gone. Manufacturers find that risks and expenses are too high in the big cities. Moreover, their managers, foremen and operatives find life cleaner, pleasanter and cheaper in the small country towns.

With the important business enterprises, therefore, seeking the smaller places, we have a most powerful force working for the industrial upbuilding of the smaller towns. And with the industrial invigoration should come a higher civic art—that is, a cleaner, saner and more beautiful town—and a more efficient social life. The opportunities are immeasurable. Let us make the most of them. Only let us give up trying to make a big city out of every good country town, and build it rather in conformity to its own character and in a manner to serve its own high and peculiar purposes.

The "Baby" Commission Government Town

Pass-a-Grille, on the Gulf coast of Florida, boasts the distinction of being the smallest municipality in the country having the commission form of government.

The town is situated on a "key," or island, between Tampa Bay and the Gulf of Mexico, and is a favorite resort for residents and visitors at St. Petersburg, a large tourist center on the bay. Its permanent population is scarcely two dozen, but many citizens along the coast own cottages there, where they can run over at any time and enjoy the tarpon fishing and Gulf bathing.

With the settling of the island, although principally by a floating and irregular population, came the community need of public improvements, sanitation, police powers and so forth. For nearly a year this tiny municipality has had a board of three commissioners attending to its affairs, and the plan has proved very satisfactory. As the nature of the case demanded, the personnel of the electorate is different from the ordinary, the charter providing that all male persons of legal age who are owners of real estate in the town, and who have been temporary residents there for two days previous to any election, may vote thereat. This section was framed originally to include women property owners, but the constitution of the state forbade its passage in this form.

Another feature unusual to commission charters is that the recall provision is inserted, without the initiative and referendum. Under the recall provision, the officer whose removal is sought may have included in the call for election a two-hundred word "justification" of his course in office. Should the election result in his removal, it is necessary to call another election to choose his successor.

Local taxation has provided sufficient revenue for making quite extensive public improvements. The town has been thoroughly cleaned up, about half a mile of substantial sea wall built, and street, sidewalk and other improvements are in progress.

Pass-a-Grille is the only town, save one, in Florida operating under a commission charter, and is the butt of many jokes in the state press; but the people are very well content with the businesslike arrangement of their government.

(Mrs.) ANNIE McRAE.

Continuous Electric Service in Small Towns

By G. B. Baskervill, Jr., M. Am. Soc. C. E., M. Am. Soc. M. E.

UNDER ordinary conditions a small town of 1,000 inhabitants can not afford to operate an electric light and power plant day and night all the year around; and in some towns of 5,000 inhabitants the electric plant has found continuous service to be unprofitable. For a town of 1,000 inhabitants the reason is obvious. The load during the day would be only a few horsepower and the revenue to be derived from such a small business is not sufficient to pay for the fuel used, to say nothing of the other expenses of operation.

The above statements hold true under ordinary conditions. By changing the conditions, continuous electric service can be obtained at a profit in towns with a population as low as 1,000 inhabitants.

Some conditions, of course, are common to both cases. The population is the same in each case; and the necessity for fire protection, and consequently for water works, is the same in each case. Usually, the light plant and the water plant are under different managements; or, if under one management, the pumping machinery is such that the pumping load can not be utilized to increase the electric load. Generally, this pumping machinery consists of steam duplex pumps forcing water into an elevated tank.

Sometimes the electric plant has a load sufficient to pay operating expenses only between the hours of 6 and 11 P. M. In fact, some electric plants in small towns only operate from dusk to midnight because of these load conditions.

In some small towns there is only one electric unit, the management assuming that all repairs can be made during the daytime, when the plant is not running. This may be true nine times out of ten; but the tenth time a breakage occurs that requires several days to repair, and the town is left in darkness several nights.

Such a plant is installed with only one electric unit in order to save operating expenses in the way of interest and depreciation, and it is operated only until midnight in order to save money; but the advantage thus gained in economy of opera-

tion is offset to some extent by the loss of patronage. Such practice tends to keep the load at a minimum, as some prospective customers will not subscribe to such service because of its unsatisfactory nature.

In attempting to change these conditions, the results desired can not be obtained in towns where it is not understood that the increased insurance rates due to deficient fire service more than offset the amount of increase in taxes that would be due to interest on water works bonds. With this exception, the change of conditions can be accomplished in any town of 1,000 inhabitants, provided the water works and electric plant are under the same management, or provided the different managements will be willing to work to mutual advantage.

The changes to be made in order to obtain continuous electrical service are only two, and sometimes only one. Where the electric plant has only one electrical unit, it will be necessary to install a duplicate electrical unit in order to give satisfactory service. Where two units already exist, it is necessary to make only one change, and that is from steam-driven pumps to several small electric pumps. The electric pumps are selected in sizes such that each will require operation during a period of eighteen hours to pump the amount of water required by the town. The elevated tank is utilized under both conditions of operation.

Under these changed conditions the electric plant is loaded with an electric pump operating from midnight to 6 P. M., and from 6 P. M. to midnight with the residence and street lighting load. In this manner, the amount of load on the electric plant is nearly the same throughout the twenty-four hours. No machinery is discarded, even the steam pumps being kept in reserve for fire-fighting purposes.

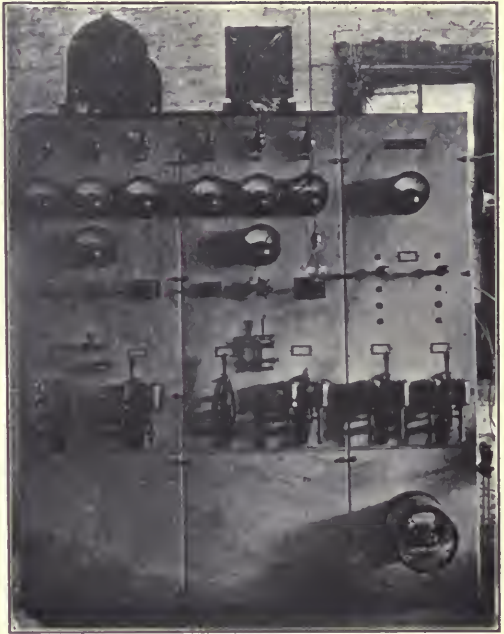
One prevalent fault in designing small electric plants is the selection of units too large for the load carried. Generally, units of 35 to 50 K. V. A. capacity will be large enough to take care of the town, including the peak load. In case of high peak, three small units will be more economical to operate than two large units.

The cost of making the changes called for will depend somewhat on local conditions. Where two boilers and two electric units are already in operation, the cost would be small. Electric pumps of a high efficiency turbine or triplex type can be installed for from \$1,000 to \$3,000, depending somewhat on the water consumption of the town. Where an additional boiler and an additional electric unit are required, the cost of the changes will vary between \$5,000 and \$10,000 for towns of the size named.

Having noted these changes of condition, it remains to investigate the change in cost of operation. Assuming that 12 per cent is a fair charge for interest and depreciation on these improvements, the operating expenses will be increased by this item from \$10 to \$100 per month. Insurance requirements compel the water works to keep both a day and night crew at the plant, so there should be no extra charge for labor. So far, the difference in cost of operation is on the debit side.

There will be a saving in fuel used with the electric pump. Approximately, it requires three to four times as much steam to do a given amount of work with a duplex pump as it requires with a simple steam engine. This is due to the fact that the expansive power of steam is utilized in a steam engine and is not utilized in a steam duplex pump. In converting the power of the engine into water pressure by means of electric pumps, 20 per cent of the power is lost in the electrical machinery; but, even then, the steam pump uses from one and one-half to two times the amount of steam required by the electrical pumping plant for the same work.

Where compound and condensing engines are used, the economy of electric pumps is increased; and, on the other hand, where the sizes and economies of the machines installed are not selected according to the best engineering practice, the economy of electric pumps is decreased. To save one-third of the amount of coal required to



FRONT VIEW OF SWITCHBOARD, SHOWING SWITCHES FOR DISTRIBUTING LOAD

pump with steam duplex pumps should be an easy task for the engineer who properly designs his electric pumping plant.

The one credit of coal saved should balance the debits mentioned above; and, in addition, there will be a considerable amount of new business obtained due to the day current, as well as great increase in number of customers due to the more satis-



THE ADDITIONAL ELECTRIC UNIT AT MACON, MISS.
A compound-condensing engine-direct-connected to 2,800-volt, 3-phase alternator

factory service. When the water works are under different management, an attractive contract can be made for pumping water that will work to the advantage of both plants.

The electric pumps allow a cheaper cost of operation in most cases than could be obtained by connecting the pumps direct to the engine. This is because the interest and depreciation charges on the pumping engine and increased floor space would more than balance the 20 per cent loss in the electrical machinery. Of course, in large cities, where high-duty pumping en-

gines are possible, the electric pumps would not be profitable.

Three years ago the writer changed conditions at Macon, Miss., giving this town continuous electric service. Macon has 2,000 inhabitants, half of the population being negroes who do not patronize the light and water plant. The result has been very satisfactory. The number of customers and income have more than doubled. While the load has also doubled, at the same time the fuel expense is less than formerly. Any other town of 1,000 white people can do the same thing and get good results.

The Shade Tree Problem of Cities—Some Methods of Solution*

By Henry N. Castle

Secretary, Commission on Beautifying the City, Norfolk, Va.

I MIGHT summarize the method of procedure as follows:

(1) If authority has not already been granted over the street trees and parkway areas of your town, secure an act of your state legislature granting such authority.

(2) Have your city authorities pass an ordinance establishing a Street Tree Commission under the provision of the state act.

(3) Have the commission organize and draft such ordinances as will be necessary in the execution of its power.

(4) *Get Busy.* Plant, prune, cultivate, water, and systematically care for all the street trees of your city, the extent of your work to be commensurate with the appropriations granted by the city and the income from work done for citizens. The initial cost of such planting should be borne by the abutting property owners and the after cost borne by the city.

Now, having provided the necessary legal machinery to set in motion your street commission, you still have physically to plant the trees. The best ordinance in the world never yet planted a tree, and never will; and upon the intelligent or lack of intelligent working out of the powers conferred by the ordinance depends the success or

failure of municipal control of street trees.

A word or two as to the formation of your commission. Pick carefully your members. They should be men or women of sufficient public spirit to be willing to give the necessary evening once each week for the first year or so until plans are well formulated and operations running smoothly. One or more members should have had the advantages of travel at home or abroad to get ideas of how other communities are solving like problems. One or more should have had some practical knowledge of tree life and a knowledge of the laws governing its growth. All should be citizens of recognized influence in the community whose plans and workings will command the respect of its citizens. Let as little as possible of the appropriations made for the maintenance of the commission be used in running the machinery. Unless trees are planted, pruned and repaired, the commission is not securing the results desired, no matter how smoothly the machinery runs nor how excellent are the plans devised. Again, go slow at first. Experience is a great teacher, and you will need lots of teaching. Better plant 100 trees the first year and learn the difficulties connected therewith than to attempt to plant 1,000 and make a failure of it.

* Extracts from an address before the Annual Convention of the American Civic Association, Baltimore, Md., November 20, 1912.

Outlining the Commission's Work

Then, too, the city covers a wide area, and there may be scores or hundreds of miles of streets. Where shall we begin to work? As a result of experimenting and experience after much thought, the Norfolk Commission adopted the following general outline for its guidance, which may serve as pointers to others:

"The plans of the Commission look to the protection of all trees on the streets commencing with those in the most exposed situations and liable to greater damage; to save all trees worth saving, and to let even inferior trees continue to grow until it is in a position to substitute better trees therefor; to refrain from setting out trees upon any of the streets in the 'down-town' and other sections of the city that are liable to come into business use within the next decade, preserving the trees already growing but adding no expense in setting out others that may have to be removed within such period; to commence a systematic planting of trees upon the streets and boulevards having the greater amount of travel, and filling in those streets in the thickly settled residential portions of the city where public-spirited citizens have already set out a number of trees, thereby completing such sections; to take under the care of the Commission all trees of recent planting, whether planted by the Commission or not, pruning, mulching and watering such trees the same as if they had been planted by the Commission; to arrange with the School Board for the planting of trees around all school grounds and upon the streets contiguous thereto for the distance of at least one block from the school grounds, as a permanent and continuous object lesson to the school children, and, by the formation of committees of teachers and children to interest them in the growth, protection and care of the trees; to cross section the city with much traveled streets fully planted with trees, and then from year to year fill in the intervening streets so as to make complete areas of the city as rapidly as possible, and to be ready always to respond to the request of citizens who are willing to pay the initial cost in order to get trees growing sooner than the Commission would otherwise plant them."

Selecting and Planting the Trees

The next question arises, what trees shall we plant? It would take a half hour to discuss the reason why the list of desirable trees for street planting can be counted on the fingers of one's hands, and then not counting the thumbs! Experience has shown that the following are suitable trees: The Norway maple, oriental plane, American elm, red, thin and yellow oaks and the Japanese ginkgo. With the proper care in handling from the nursery to the street

root bed, you can count on these trees living and proving good street trees. Under specially favorable conditions you might add the European linden, the sweet gum and the paper mulberry (the non-fruit-bearing variety). Where parkway areas are 12 feet or more in width, or upon small parks, there may be grown, producing a beautiful effect, the crepe myrtle, pink and white alternating, the horse chestnut, the smoke tree, and, with a water margin, the willow tree. Each locality will have to work out and determine its own proper trees, but, as will be seen, the list from which to choose is very limited.

Having determined the kind of trees and the kind to be planted upon each street, then the question arises, what size tree shall we plant? Here again experience teaches that with trees shipped from outside nurseries, those calipering $1\frac{1}{2}$ to $1\frac{3}{4}$ inch, 6 inches from the ground, are more likely to live than those of larger size. When trees can be taken from the home nursery and planted the same day they are taken from the ground, the larger sizes can be planted safely up to $2\frac{1}{2}$ to 3 inches caliper. In ordering your trees, secure bids from half a dozen or more reputable nurseries, specifying the number and size of each kind desired and condition that the trees shall be thrifty transplanted stock, free from disease, with straight trunks suitable for street trees, capable of trimming to not less than 7 feet from the ground, with uncut leaders and an abundance of fibrous roots, and that protection must be given the roots from the moment the tree is taken up until packed in the car with moist straw, leaves or mulch. On receipt of the car the trees should be carefully unloaded by your own men, the roots covered with damp burlap or other covering, so that there shall be no exposure to wind or sun from the car to your nursery, and there the trees should be heeled in immediately as unloaded from the wagon. When planting upon the streets take up only such trees as you may immediately need, keeping the roots covered with a moist covering until placed in their final location. The particulars as to the preparation of the root bed, manner of planting, the placing of guards, the after cultivation and watering of the trees, may be obtained from the specifications adopted by the Norfolk Commission for the guidance of its men and inquiring citizens.



ORANGE GROVE AVENUE, PASADENA, CAL.

Street Lighting in Pasadena

By C. W. Koiner

General Manager, Municipal Lighting Department, Pasadena, Cal.

PASADENA, California, which now has a population of 35,000, was the first city to make a large installation of series tungsten street lamps. All of the city streets are lighted by means of tungsten lamps, with the exception of three hundred arc lamps. In most cases on the residence streets, the lamps are of the single unit, 50-watt, 40-candle-power type, mounted on nine-foot brackets extending over the street, equipped with corrugated enameled street hoods. This has been found to be a very efficient means of lighting the streets, giving a maximum amount of light at a minimum cost.

In many sections of the city, people are desirous of installing ornamental street lighting posts with a view to increasing the beauty of the streets at night. The first lighting of this character was in the business part of the city, where 130 posts of 13 lights each, representing a shower, were installed.

The next installation was on Orange Grove Avenue, where a distance of 8,000 feet was lighted by means of ornamental posts, each with one light on the top. These posts are of solid bronze, costing \$90 apiece for the posts alone. The installation consists of 170 lamp posts equipped with 100-watt lamps, 18-inch globes, underground conduit and wiring, the total installation costing \$30,000. The installation of all ornamental street lighting in Pasadena is paid for by the abutting property owners, pro-rated per front foot.

At the present time installation of ornamental posts is being made on two other streets, one in the business part of the city and one in the residence section. The posts being installed on Union Street in the business part of the city are of iron and are equipped each with five 100-watt tungsten lamps, one 14-inch globe on the top and four 12-inch globes on the arms.

The policy of the city in connection with future installations is that all residence streets shall be equipped with one-light

standards, except on Colorado Street, which is one of the wide and main thoroughfares, where posts equipped with the same number of lights and in the same style as those in the business center are to be used throughout the length of the street.

Inasmuch as the ornamental lamp fixtures, posts, etc., are furnished by the property owners, the city furnishes the electrical energy from its municipal plant for their illumination; and it is paid for from the amount raised by taxation for street lighting. Lamp replacements are paid for by the city in the same manner.

The wiring is so arranged that the top lights burn all night, and the side lights on the arms are turned out at midnight. In some cases the wiring permits the lamps on the corners to burn all night, while all intervening lights are turned out at midnight. In this way the expense is kept down, and, even with the reduction, there is sufficient illumination for the entire night.

All the Pasadena parks are lighted by means of single-light ornamental posts, underground-connected, equipped with 100-watt tungsten lamps. This has been found to be a very efficient and attractive means of illuminating the parks, the lamp standards being placed in such a way as to illuminate all dark places and make them attractive for an evening promenade.

The city has an area of approximately 18 square miles, and has 150 miles of streets, all of which are lighted. The cost for the fiscal year ending July, 1912, was \$40,714.45, or at the rate of 5.4 cents per kilowatt hour. The price received per lamp unit is:

- \$1.00 per month for 40-candle-power tungsten street series lamps;
- 5.00 per month for 6.6-ampere enclosed arc lamps;
- .03 per kilowatt hour for cluster lighting in central part of city, overhead-connected;
- .04 approximately, for cluster lighting underground-connected.

Proposal Notices

Any city, town or county which places a club subscription for THE AMERICAN CITY is entitled to the use of this department without charge for proposal advertisements not exceeding four inches single-column measure. Additional space at reasonable rates. If bids should be asked for at too early a date for insertion in the following issue, send copies of your notice to THE AMERICAN CITY, and we will distribute same without charge.

PROPOSALS FOR WATER WORKS IMPROVEMENT

Rock Hill, S. C.

Sealed proposals will be received by the Public Works Commission of the City of Rock Hill, S. C., until 3 P. M., January 21, 1913, for building a water-works plant.

The work will consist of Auxiliary and Main Pump Station, Electric Pumps, 1,000,000-gallon filter plant and reservoir, and about 5 miles of 12-inch pipe line to the Catawba River.

Plans and specifications will be on file at the office of the Superintendent at Rock Hill, S. C., and at the office of the Engineer at Charlotte, N. C., and specifications, bidding sheet, etc., will be mailed on application to the Engineer.

A complete set of plans will be mailed on payment of \$5.00 to cover cost.

No bid will be considered unless accompanied by a certified check for not less than 5 per cent of the amount of bid (said check to be in no case less than \$250.00) as an evidence of good faith.

The right is reserved to reject any or all bids.

J. B. JOHNSON, Chairman.
Engineer: GILBERT C. WHITE,
Charlotte, N. C.

PAVING

Clinton, Ia.

Sealed proposals will be received at the office of City Clerk, Clinton, Ia., until 8 o'clock P. M., on the 14th day of January, 1913, for a street improvement consisting of the following approximate quantities:

36,800 sq. yds. concrete or brick paving.

11,000 lineal feet combined curb and gutter.

Certified check, \$1,000. Plans and specifications and forms on file with the City Clerk of City Engineer.

C. J. REUSCHE, City Clerk.
J. G. THORNE,
City Engineer, 317 Howes Block.

VALVES

City of Port Arthur, Ont.

Sealed tenders, endorsed on envelope, "Tenders for Valves," will be received by the undersigned up to 5 o'clock P. M. of Monday, February 3, 1913, for the supply and delivery of the following valves—F. O. B. Port Arthur:

24-in. gate valves, equipped with operating gears, 30.

12-in. gate valves, without gears, 9.

24-in. check valves with 3-in. by-pass, 2.

Specifications can be seen at the office of the Engineering Record, or the office of the City Engineer, Port Arthur.

A marked check for an amount equal to 5 per cent of the contract is required as a deposit.

The lowest or any tender not necessarily accepted.

J. J. HACKNEY,
Commissioner Utilities.
Corporation Offices, Port Arthur,
December 28, 1912.

PROPOSALS FOR INCINERATING PLANT

DEPT. OF PUBLIC WORKS.

Detroit, Mich., Dec. 23, 1912.

Sealed proposals will be received at the office of the Department of Public Works, Detroit, Mich., until Tuesday, Feb. 4, 1913, at 10 o'clock A. M., standard time, when they will be opened, for furnishing labor and material and erecting complete and put in operation an incinerating plant in the City of Detroit; in accordance with specifications furnished upon application to this office.

Firms requesting copies of specifications must inclose certified check for \$25, which will be returned to the bidder upon the return of specifications.

Said plant to have a capacity to destroy 100 tons of garbage, rubbish, ashes, etc., in twenty-four hours.

Bidders will submit proposals for the entire work as per specifications.

Each bidder must deposit with bid a certified check in separate envelope for \$10,000, payable to the order of the Department of Public Works.

Which sum shall be forfeited to the Department in case the bidder fails to enter into contract within 30 days after the acceptance of tender. Contracts to be subject to the approval of the Common Council. The bidder whose tender is accepted will be required to furnish with his contracts approved surety company bond to the City of Detroit and State of Michigan in the full amount of contract.

No bids will be accepted from any person or firm who is in arrears or default to the City of Detroit.

The Department of Public Works expressly reserves the right to reject any or all proposals.

J. J. HAARER, Commissioner.

BRIDGE

SUBSTRUCTURE AND SUPERSTRUCTURE,
SCHERZER ROLLING LIFT BRIDGE AND
APPROACHES, CITY OF OSH-
KOSH, WIS.

Office of the Board of Public Works.
OSHKOSH, WIS., Dec. 23, 1912.

Sealed proposals will be received by the Board of Public Works of the City of Oshkosh, at the City Hall, until 12 o'clock noon of January 29, 1913, for the construction of a new bridge to replace the present bridge across the Fox River at West Algoma Street.

Separate proposals shall be made for each of the following items:

(1) Substructure:

For the removal of the existing bridge both substructure and superstructure; construction of a temporary bridge and removal of same when the new bridge is completed; and the construction of the piers, fenders, abutments, retaining walls and filling for the new bridge.

(2) Superstructure:

For the construction and erection complete, ready for operation and traffic, of a plate girder deck highway and electric railway bridge, consisting of six approach spans and one Scherzer Rolling Lift span, having a total length of 602 feet center to center of abutments

and a width of 42 feet center to center of sidewalk hand rails.

All work shall be fully completed and the bridge in service on or before January 1, 1914.

Printed forms for both substructure and superstructure proposals, giving estimate of quantities and information relating to the work, contracts and contract bonds and complete detail plans of all portions of the work may be had upon application to the Board of Public Works of the City of Oshkosh, accompanied by check to the order of the City of Oshkosh for the sum of five dollars for each set thereof. No bid will be considered unless accompanied by the contract and bond provided by the city, completely executed with the exception of the signatures on the part of the city. The amount of the bond submitted shall be the entire contract price; and the right is hereby reserved to reject any and all bids.

R. A. HOLLISTER,
HENRY T. HAGENE,
GEORGE H. RANDALL,
FRED HEINTZ,
(Board of Public Works.)

SCHERZER ROLLING LIFT BRIDGE CO.,
Engineers.

BRICK PAVING

Sealed bids will be received by the Board of Water Supply at its offices, seventh floor, 165 Broadway, New York, until 11 A. M. on Tuesday, January 21, 1913, for Contract 134 for surfacing with vitrified brick block, highways around the Ashokan reservoir, in the towns of Olive, Marlbtown, Hurley, Woodstock and Kingston, Ulster County, New York.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders and contract drawings can be obtained at the above address by depositing the sum of ten dollars (\$10.00) for each pamphlet. For further particulars see Information for Bidders.

CHARLES STRAUSS, President.
CHARLES N. CHADWICK,
JOHN F. GALVIN,
Commissioners of the Board of
Water Supply.
JOSEPH P. MORRISSEY,
Secretary.

IF THERE IS NEED

in your city or town for more active interest in municipal improvement work, why not get up a club of subscriptions for THE AMERICAN CITY, so that your public officials and officers or members of your Board of Trade or Chamber of Commerce may be kept in touch with what other cities and towns are doing which is worth while.

ROADS & PAVEMENTS

Photographs and data are requested for possible use in this department, from municipal officials, city or county engineers, road superintendents, manufacturers or others having interesting information on subjects relating to roads and pavements.

The Economics of Highway Construction*



The Danger of Paying for Short-Lived Improvements by Long-Term Bonds—A Tax on Automobiles and on Gasoline Advocated as an Aid to Road Maintenance



By Clifford Richardson
Consulting Engineer

THERE is nothing which should commend itself more to the support of the people than the movement for the improvement of our highways. Too much money cannot be spent for this purpose, if it is available and expended in a rational way and with due consideration of the financial problems which it involves. There is no question but that better roads than we now possess are not only desirable, but in many cases necessary; but the point to be considered is, how can we finance their construction if we are to build them on the expensive scale which is now proposed and, in many cases, is being carried on, without being involved in difficulty? In other words, the economic aspect of the road problem has not been sufficiently considered.

The economic question relating to highway construction is, how shall the expense of building roads and maintaining them in the most satisfactory and economical manner be met, and who shall provide for it? Shall it be assessed on all persons alike or more largely on those who use the roads? How shall the money involved be raised and what are the most economical and equitable methods of so doing?

At least 75 per cent of the cost of many of our highways is for work of a temporary nature, and a large and most destructive

part of the travel which uses them consists of pleasure vehicles and but a small proportion of what may be classed as productive traffic, the transportation of merchandise and for business purposes in general. If our states are rich enough to afford such an expenditure and meet the cost through revenues collected during the life of the surface of the road, regarding them as mere satisfactions and only in part as utilities, the problem becomes a very simple one. As a matter of fact, a large proportion of the improved highways which have been built in the last five years would never have been constructed on the expensive scale that they have been were it not for the demand for them by persons who use them as a mere satisfaction for the pleasure of motoring, although it must be recognized that the motor truck and the traction engine are gradually becoming a serious feature in the problem.

It would seem, therefore, that the cost of these expensive roads should be met, at least in some part, by revenues derived from the taxation of motor travel, and that a large portion of their maintenance should be paid for from the same source, since the majority of the vehicles which now use our roads are of this description, and it is for them that the roads are particularly built. The expensive modern bituminous road could certainly be dispensed with if motor

* From a paper presented at the ninth annual convention of the American Road Builders' Association, Cincinnati, Ohio, December 3-6, 1912.



Alba Installation: Lincoln Park Boulevard, South from Burton Place, Chicago. Night View.

Ornamental Street Lighting

Why not improve residence property as well as business property by well-lighted streets?

Alba Globes

with Tungsten groups give the best results—evenly diffused light, close to the ground where it is needed, and without dazzle or shadow streaks, the common defects of arc lighting.

Alba gives better results than any other glassware because it absorbs far less light than any other glassware used for the purpose.

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travel were done away with. They are, therefore, maintained largely for this form of travel alone, and for the greater part for pleasure and not for traffic.

The manner of financing road construction is carried out more carefully in Great Britain than in the United States. Road construction is usually paid for there with money raised by loans, but only with the approval of the Local Government Board of the character of the work and for a period not exceeding the life of the work, with suitable provision for the amortization of the debt. In addition the Government Road Board, which has been recently established for assisting the local authorities, distributes, according to its good judgment, the proceeds of the license tax on motors, varying from \$5 to \$205 per annum, and of a tax on motor spirit of six cents a gallon, a fund which will amount in 1912 to over \$6,000,000, and which will increase from year to year. It would seem that something of this description must be done in our states. At present this is realized to a certain extent in some of them, where a graded tax upon motors is in force, depending in amount upon the horsepower of the vehicle. The tax on gasoline has not even been proposed, but it must come in time to place the burden of the cost, of maintenance at least, in part where it belongs.

Should such a tax be imposed in New York State, where 100,000 motor vehicles have been licensed in the year 1912, and assuming, according to Howard C. Coffin, that the average motor car runs 4,000 miles per annum, the entire motor mileage on the roads of the state would be 400,000,000. On a conservative estimate that a gallon of gasoline is equivalent to 15 miles of car travel, and it is probably not more than 10 with the more powerful cars, about 27,000,000 gallons of gasoline would be burned per annum in New York State. If this were taxed six cents a gallon the revenue would be \$1,620,000, a sum which would go far, when combined with the fees obtained for licenses, in maintaining the surfaces of our main arteries of communication, and place the burden of their upkeep where it properly belongs.

In a few localities in America the cost of road construction is met by general taxation. In most states, however, the custom of meeting the expense incurred by long-

term state or county bond issues is in vogue.

The folly of purchasing a motor car by the individual from the proceeds of the mortgage of his property, without regard to how this can be paid off is generally recognized, whereas the construction of expensive roads over which to run such a machine which are paid for with money raised from bonds having a long time, 20 to 50 years, to run, and which are a charge on the state, the county or the town, is seldom looked upon from the same point of view, although the life of the motor and the life of the road are equally short. Both the cars and the roads are luxuries, having short lives, and their cost should be provided for during this period and not postponed to some indefinite date.

It must, of course, be recognized that the construction of improved roads will increase the value of property to an enormous extent, and the revenue derived therefrom accordingly. This is to a certain extent a justification for such bond issues, but it does not in any sense justify such an issue from an economic point of view.

It has recently been asserted that there is no more reason why the building of highways with the proceeds of bond issues should be criticised than the issuing of bonds by steam railroads. This is quite true, but a railroad management which would issue long-term bonds to purchase rails or ties, which have a short life, is equally open to the criticism of expending the funds obtained by bond issues for the construction of road surfaces which have an equally short life. Bonds are never issued by railroads which manage their finances conservatively, for the purchase of rails and ties, and where they are issued for equipment purposes, the period does not extend beyond the life of the equipment. A railroad, conservatively managed, pays for its rails and maintenance of way out of its earnings, and not by the proceeds of long-term bonds which would eventually make the maintenance cost twice as much as it otherwise would be. There is no assurance of permanence, either in rails or in road surfaces. They are both known to deteriorate rapidly with use. On the other hand, there can be no objection, either in railroad or highway construction, to the borrowing of money by bond issues extending over long periods, where it is expended

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This new 4 ampere lamp is designed primarily for lighting residential streets, or it may be used in front of public buildings, hotels, club houses, offices, etc.

The lamp gives a large volume of soft, white light free from glare. The light is so well diffused that the buildings as well as the streets are illuminated, bringing out the architectural details.

This Residential type is not as high as the ordinary lighting unit and therefore foliage does not interfere with illumination.

The supporting columns are distinctive and are adaptable to either simple or ornate treatment.

Because of the refined standards, the appearance of the streets and buildings is enhanced during the day.

This new Residential type can be used for "White Way" lighting where a 4-ampere luminous system is already installed or where it is desired to have a lower candle-power unit spaced closer together than is necessary with the Form 10 (6.6 ampere) unit.

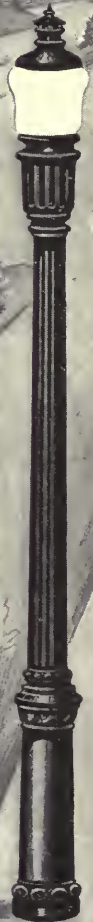
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on permanent construction, such as the improvement, in the case of railroads, of the roadbed, or building stations, or, in the case of highways, of the location, relocation, or construction of foundations of a road. If the \$50,000,000 to be realized by the next bond issue in New York State were expended for concrete foundations, for drainage and for improved location and reduction of grades, it would be well expended, and such work being permanent might well be distributed over a number of generations, but for the building of surfaces and their maintenance with the funds obtained by such bond issues, there can, in the

writer's opinion, be no economic justification.

In conclusion, the writer would say that the demand for an improved form of surface upon our highways is so insistent and will, eventually, be so necessary owing to the advent of the motor truck, that they will be built under any circumstances, whether with due regard to the principles of economics or not. His object, however, is to call the attention of the taxpayer, the highway engineer and legislative authorities to the economic side of the question, as a warning of what may result if these are neglected.

Openings in Street Pavements*

How the Problem of Cuts and Their Restoration is Handled
in Cincinnati

By James E. Barlow

Assistant City Engineer, Cincinnati, Ohio

Aside from shortening the life of the pavement, openings in streets cause danger and annoyance to traffic, wear and tear to vehicles; they render cleaning more difficult; they are unsightly in themselves until repaired; they are costly to restore, and later become the source of additional repairs. Thus the importance of properly controlling such openings and reducing them to a minimum is readily seen.

As a complete solution of this problem, some have suggested subways or pipe galleries under the streets with laterals to property lines. Others have suggested subways under the sidewalks, necessitating double lines of mains. However, the investments tied up in the present form of underground construction, the enormous expense necessary for subways, and the fact that much of the sidewalk space where subways are most needed is used privately for buildings as areaways, all tend to throw this solution, for most cities, into the somewhat distant future. The problem thus becomes one of best controlling the present cuts and reducing the number to a minimum.

When a street in Cincinnati is to be improved, notices of the two final steps in the legislation are sent to all the public service corporations, and again when bids are received, and again when the contractor is ordered to begin work. The object of these notices, of course, is to keep the companies informed of the status of the proposed improvement and allow them ample time to plan repairs, renewals or extensions.

As an additional lever, early this year a city ordinance was passed which virtually prevents any opening in a newly-laid pavement for a period of three years, except in certain emergencies. Notices calling attention to this ordinance are sent to all public service corporations and to property holders about three months before the actual work of construction begins.

The topography of Cincinnati is such that often the heavy cuts and fills practically prohibit the laying of mains until the street is graded. On all contracts now let, if the street does not already contain water and sewer mains, they are included in the street improvement contract. We only wish we might include gas in the same way.

To prevent, in so far as possible, openings for house connections, we are now serving

* From a paper presented at the ninth annual convention of the American Road Builders' Association, Cincinnati, Ohio, December, 1912.

The Trolley Company Will Co-operate

SPAN
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in your plan to give your town an up-to-date lighting system, and will let you use their trolley poles to secure a "white way."

ERECO Combination Railway and Lighting Poles

It is possible to utilize an ordinary street railway pole in connection with ornamental bases and brackets to support the new inverted luminous arc lamp.

You can string your wires along the top of the poles, where they are practically unnoticeable and out of the way of traffic.

You save the cost of additional lamp standards and underground construction, and avoid further obstruction of the curb line.

Catalog "D" describes this money-saving ERECO Plan—write for a copy.

Design No. 10127

Electric Railway Equipment Co.
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Contains formaldehyde and eucalyptus. A scientific sweeping compound that kills germs, absorbs the dust, preserves life and property. It prevents the spread of tuberculosis and other diseases. Economical. Used by U. S. Government, and recommended by Boards of Health.

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Can our engineers help you?

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114 LIBERTY STREET
NEW YORK CITY



notices on all property owners along a proposed improvement to make water and sewer connections to their lots, whether occupied or vacant. If these are not made in 20 days, the city makes such connections to the curb line and assesses the cost thereof against the individual property. This calls forth considerable objection, but it must be borne in mind that half the owners gladly make all connections, and it is only just that we should take such steps to prevent the other half from damaging the pavement.

The Control and Restoration of Necessary Openings

An important step in an intelligent control of street openings is to know *what* you have under the pavements and *where* these structures are. This primary information is not always in the hands of cities. In connection with an investigation for a comprehensive sewer layout, a complete underground survey is being made to locate all of the subsurface structures. These plots will be made on a scale of 40 and 50 feet to the inch. There will be possibly 1,000 sheets, 24 by 34 inches, in the complete set. When compiled these will be kept up-to-date as a basis for our underground records and we can then more intelligently direct future underground construction.

There is, of course, also to be considered the actual making of the restorations. Several years ago a city ordinance was passed

making it unlawful for any person other than the Street Repair Department to open any pavement without a permit therefor. This ordinance further provided that the application for this permit should state the location and size of the opening and the kind of pavement. Before the permit is issued a deposit is required, based on the published sliding scale of prices for the restoration of different sized openings in the various kinds of pavements. No persons other than the employes of the Street Repair Department are allowed to permanently restore these openings.

The party making the opening does the backfilling and makes a temporary restoration of the pavement; if the backfilling is not properly done, the Street Repair Department will do the work over and bill the cost to the party responsible. The Street Repair Department handles the issuing of all permits and, of course, makes all rules in accordance with which such openings can be made. The control of the openings and the responsibility for their speedy and adequate restoration are thus centralized.

This outlines the principal steps taken here to control street openings. Some of these measures cause much friction and delay, especially those involving serving of legal notices which require definite periods of time before action can be taken. However, we feel that the end justifies the means.

Two New Trucks for Collecting Ashes, Street Sweepings and Garbage

By Edward D. Very, C. E.

Department of Street Cleaning, City of New York

THE Department of Street Cleaning of the city of New York has long felt that the present method of collection of the ashes, street sweepings and garbage in two-wheeled carts is antiquated and uneconomical. During 1911 there were collected 2,184,243 tons of ashes, 546,061 tons of street sweepings, 313,575 tons of garbage—a daily average of 9,756 tons. The carts used at present carry approximately one ton and there is great loss of time in carrying the load to the dump and return-

ing light. It would appear that there would be a great saving of this particular item if a five-ton vehicle was used, as the lost time would be only the same in the larger as the smaller unit.

There appeared to be no vehicle at present which was in every way suited to our requirements. We, therefore, took up the matter with a wagon manufactory in Brooklyn, with the result that a truck was built which seems to meet the requirements. This truck has a low body, large capacity, and is

Mr. City Official:

Are you aware of the fact that the most telling Campaign you can possibly make for re-election, is the record you have made during the tenure of your Official Term? Progressive people admire a progressive official.

PROGRESSIVENESS IS THE KEYNOTE OF OUR TIME

There was a time when people carried a Tin Lantern perforated full of holes with a Tallow Candle burning inside, to light their pathway. This gave way in Cities to gas or gasoline lamp posts, placed at Street Crossings, and this was

PROGRESS

Then came the Electric Arc Lamps suspended in mid air, placed long distances apart, blinding you with its spluttering as you approached, then blinding you more as you passed into the dark spaces between lamps, and even though 50 per cent. of its efficiency was sent up toward Heaven, it was

MORE PROGRESS

Mr. Mayor or Mr. Councilman:

*If you wish to ingratiate yourself
forever with your citizens write*

The Sterling Electric Lamp Works
of General Electric Co.
WARREN, OHIO

For

"WARREN BEAUTIFUL"
and
"FROM POST HOLE TO LIGHTS ON"

FREE FOR THE ASKING

Please mention AMERICAN CITY



FIVE-TON LOW-BODY TRUCK WITH TRACTOR

easily dumped. The top of the sides of the box is but 4 feet 6 inches from the ground, and there is a shelf on the outside 3 feet 6 inches from the ground on which the can may be placed prior to dumping. The capacity of the box is approximately 9 cubic yards. As the materials average in weight 1,100 pounds per cubic yard, this gives us a five-ton truck. The box has, on either side at the forward end, rings which may be engaged by hooks attached to an electric hoist by which the dumping is performed by raising the forward end and chuting the material from the back end. Here, then, we have a vehicle of large capacity easily loaded without peril of strain on the men loading, and easily dumped.

It is proposed to put in the box a partition which will permit of the ashes and garbage being collected at the same time, but kept separate, so that one trip through a street will finish the whole collection. The vehicle will be hauled by three horses or a motor tractor, and will have as an operating crew, besides the driver or chauffeur, three loaders.

The Department made a test of motor trucks which unfortunately was rather restricted as to time, being only from July 15 to September 30, and which, therefore, did not include the season of heavy receipt of ashes. This test proved the efficiency of the motor truck over the present system, giving a possible 18 per cent for lost time in hauling the load and returning light, as against 43 per cent at present. The fact that in England a test of ten years in a similar service to this showed that motor trucks were better than the horse-drawn em-

phasizes the tenability of the stand taken by the Commissioner of Street Cleaning, and the necessity of the city's recognizing that the change should be made at once.

Another type of garbage wagon, the operation of which will be watched with interest, has recently been built at the State Prison at Sing Sing. Some two years ago Commissioner Edwards took up the discussion of the motor truck with the Superintendent of Industries at the prison, and found that bureau anxious to coöperate in the solution of this problem for the benefit of all the municipalities in the state. The result is that a practical machine has been built by the prisoners.

The truck is constructed of steel, has a body with a capacity of 5 cubic yards water



BOX FROM TRUCK IN PROCESS OF DUMPING

THE J. L. MOTT IRON WORKS

FIFTH AVENUE & 17TH STREET
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Established 1828

WE have been specialists in Ornamental Lamp Posts, Sanitary Drinking Fountains, Display Fountains for nearly a century.

To City Officials

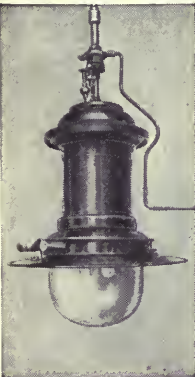
Public Spirited Citizens and those interested in beautifying Cities and Towns, we will be glad to forward our illustrated catalogues, or if desired we will submit special designs, estimates, etc.



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Sanitary Drinking Fountain.



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For Real Comfort in Drinking you need an Adjustable Fountain

The Lansing Fountain is automatically adjustable. No stooping is necessary. The bubblers are attached to flexible tubes, so that they may be raised to the height of the lips, while with all other fountains the lips must be brought to the position of the bubbler. The "Lansing" enables everyone to drink in an easy and natural position, yet with every sanitary precaution. The artistic design of this fountain renders it an ornament to any park or city street.

Let us have your address so we can send you our catalog.

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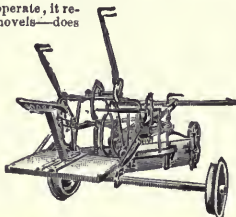


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With a team of horses and one man to operate, it removes more snow than 50 men with shovels—does it 100% better at a cost of 90% less. Gets Right Down to the Surface of Pavements or Sidewalks. Does not leave a coating of slush to freeze into a rough, slippery mass of ice and menace health, life and limb. It never "loafs" or gets tired; can't get out of order and is always on the job.

In spring, summer and fall, it grades roads, levels land, makes ditches. Low cost—easy terms if desired. Send postal NOW for catalog and full particulars, address



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SING SING TRUCK, SHOWING METHOD OF LOADING

measure, but when full loaded carries 8 cubic yards, and is so constructed that the top of the sides is of a reasonable height, permitting easy loading. It has a cover of a new design which is dustproof, and which will confine odors during transportation. This cover is in sections, having a number of doors, only one of which can be opened at one time, and which will not interfere with the loading and are easy to operate. The body of the truck is dumped by a peculiar mechanism, which permits it to be completely and speedily emptied, because it raises the body to a perpendicular position. This raising mechanism is composed of a

worm and sector gear, here used for the first time in connection with a dump cart. This device is not only effective, but it is the safest possible. It has a safety device which locks the body while it is being raised, so that there can be no injury by the fall of the body, and is so arranged as to stop and be held when in exactly the right position for dumping, and then lowered. This makes the operation of dumping completely automatic and independent of the driver, which meets the requirements usually made for such a device of its being "fool proof."



SING SING TRUCK IN POSITION FOR DUMPING



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***“A Chip of the
Old Block”***

The word “Puro” stands for the *best* in drinking fountains in the minds and experiences of all who have examined, studied, compared, and used them.

“PURO JUNIOR” is made on the same high quality lines as our Puro Combination Drinking Fountain and Faucet heretofore advertised in this paper, except that the “Junior” has no faucet attachment. In other words “Puro Junior” is a Drinking Fountain purely and simply. It can be set up anywhere. Does not have to go over a sink as the bowl is large enough to take care of the overflow without wetting the floor.

You ought to know more about this fountain. Do not confuse it with the cheap, squirting bubblers, so commonly seen, which often look as if designed to give shower baths. With the Puro you get a soft sparkling bubble of water making it possible to drink naturally. Being self-closing, allows no waste of water. Positively the most Sanitary Cup on the market. Made of red metal; nickel-plated; very heavy pattern; not alone Germ, but Fool-proof; no delicate parts to get out of order—lasts a lifetime.

Let us have your address so we can send you our printed matter and illustrations of Puro and Puro Junior Fountains. Every buyer or user of Sanitary Drinking Fountains should know about the “Puro.”

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WATER SUPPLY



The editors are glad to receive photographs and data for possible use in this department from municipal officials, water works superintendents, consulting engineers, manufacturers or others having interesting information on water supply subjects.

An Important Water Works Rate and Appraisal Investigation



A Study Which Will Result in a Saving of Twenty Per Cent to San Antonio in Its Water Rates



By Alexander Potter

Consulting Engineer, New York

THE determination of reasonable rates and an appraisal of the water works of San Antonio, Texas, recently concluded by the writer, is perhaps of more than passing interest in that its scope was more comprehensive than such examinations usually are. Not only was inquiry authorized as to the cost of the plant, its present value, the cost of rehabilitating it so as to bring it up to the highest standard for domestic and fire service, but also as to reasonable rates for public and private purposes under such new and improved conditions. Furthermore, the city insists, as a condition precedent to the extension of the contract with the water company, that the comprehensive plans designed by the writer for future extensions shall be accepted by the water company.

Since the inception of the plant in 1877, a strong feeling has existed in the minds of the citizens of San Antonio that the rates charged for water service have been excessive. Not only were these rates high as compared with other cities, but the cost of producing water at San Antonio was—and still is—less than in almost every other city in the United States, the original plant being supplied from springs within the city limits, of excellent quality and of such abundance as to afford the necessary water power to force the water through the city mains and maintain a proper pressure without other pumping power. Even the

present source of supply is from wells in the center of the city, 900 feet deep, with the flow line always above the pump suction.

There does not at any time appear to have been any serious effort on the part of the citizens to take over the plant of the water company or to build a municipal plant. This seems the more remarkable when we find from figures taken by the writer from the books of the water company itself, that, had the city purchased the plant in 1894, at its then value, the income from the plant would have been sufficient to enable the city to own the plant at this time practically free and clear of debt. As it stands to-day, however, the city is paying rates sufficient to net the water company $5\frac{1}{2}$ per cent on nearly \$4,000,000 worth of stock and bonds, with a substantial surplus.

The company has not maintained its plant at standard efficiency. For instance, there are nearly one hundred miles of street mains of but one- and two-inch diameter providing no fire service whatever on such streets and no effective domestic service in most cases—and this notwithstanding an agreement between the water company and the city that it would lay no mains of less than six-inch diameter. The spirit of this contract stipulation has been systematically violated in the following manner: Private property owners develop additions and lay throughout the streets of such additions at

Theories may be all right, but most people like to see real results. If you are one of the majority, the following letter may indicate to you that you ought to look into the question of voting machines for YOUR city or town.



City of Bristol

JOHN F. WADE, Mayor
THOMAS S. STEELE, Town and City Clerk

Bristol, Conn., Nov. 20, 1912.

American City,
93 Nassau St., New York.

Dear Sir:-

Yours of November 19 is received. In reply to same would say that the City of Bristol has purchased and used at the last national election, five Triumph Voting Machines, as manufactured by the Triumph Voting Machine Co., of Pittsfield, Mass. These machines worked out very satisfactory at election, there being no hitch or difficulty of any kind. Many of the voters, also the Mayor and City Council have expressed their approval of the machines. I know of no other City near here, at the present time, who are installing voting machines, but can heartily recommend the Triumph Voting Machine to any town or City who are contemplating the use of voting machines.

Trusting the above is the information desired, I remain,

Yours truly,

Thomas Steele

TES-JAA.

TOWN CLERK.

*Over-
coming
the
Flaws
and
Objec-
tions to
Ballot
Voting.*

*For a
Rapid,
Accur-
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Honest,
Secret,
Vote.*

We have prepared an interesting booklet showing in a conclusive way why and how Triumph Voting Machines are the ideal method of registering the vote of a community. If you want to know many important facts about the dangers and inaccuracies of ballot voting and the advantages of the Triumph system, please send us your address, and we will forward the booklet.

TRIUMPH VOTING MACHINE CO.
60 Wall Street, New York

their own cost and expense one- and two-inch mains. The first house built in such an addition is connected to one of these small mains and application made to the water company for a connection with their mains as a private service to the house. In permitting this connection, the water company has not violated the letter of its contract with the city, in that it has actually laid no mains of less than six inches in diameter. As other houses are built, other connections are made by the private property owners and the income from these water consumers is paid directly to the water company, who have not been put to any expense whatsoever, not even for the laying of the small mains in these additions.

A detailed investigation of the books of the water company showed that, in typical districts taken at random, the average receipts from these small mains would already pay about 8 per cent of the cost of mains of adequate size. Therefore, the writer recommended that all such lines, where the income was greater than \$528 per mile, the company should be obliged to replace forthwith, with mains of adequate size. This amount will yield an income of 8 per cent on the cost of the average-sized main, exclusive of feeder mains. It is further recommended that in the future the company should lay mains into new territory when guaranteed a gross income of at least \$528 per mile.

Value of the Plant

The total reproduction value of the plant of the water company, as determined by the investigation of the writer, is \$1,957,387. The depreciation was found to be \$394,827, making the net value of the plant as of January 1, 1912, \$1,562,560. This amount does not include any allowance for good will, franchise or going-concern value. Good will and franchise values, according to the findings of the courts, cannot be considered either for rate-making purposes or for purposes of purchase. A study of all conditions in San Antonio, relating to the water supply problem from the inception of the plant, clearly indicates that the profits of the company from the beginning were such as to give the owners a fair return upon the money invested from the very start—a condition tending to the lessening of the going-

concern value of the plant, if not its complete elimination.

The assets carried on the books of the company show a book value of \$3,806,575, of which \$1,626,000 is set down as the amount of the good will, franchise and going-concern value. No depreciation was written off from the value of the plant by the company, except some relatively small items.

Under the most liberal aspect of the case, the going-concern value cannot materially exceed the depreciation, and as the franchise and good will have no value, therefore the actual value of the plant, even by taking the company's figures, will be the difference between the \$3,806,575 and the \$1,626,000, or about \$2,180,000.

That the company has sought to include as assets all possible items, is evidenced by the discovery on the books of the company of an account entitled "Appreciation of Assets," in which machinery and wells which have been in service for varying periods of time have been assumed to increase in value, rather than to depreciate in value; as well as water power wholly exhausted.

Fixing the Rates

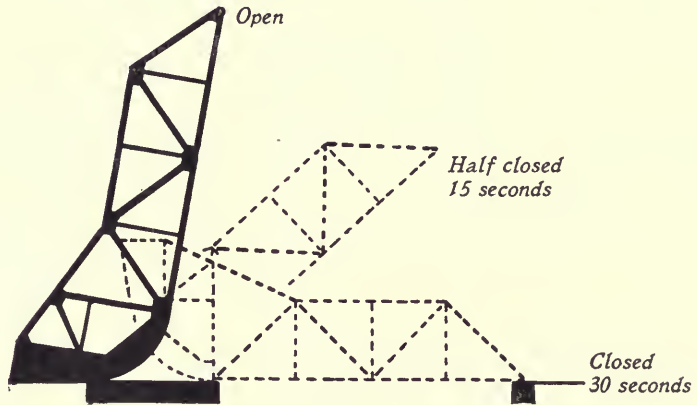
It is, therefore, upon a sum closely approximating \$2,000,000 that new rates must be established which shall return a reasonable income to the company. We must, moreover, determine at the outset the percentage return the company is entitled to on the actual investment. Rates in one state fixed to give, say 6 per cent, as a fair return, would be unreasonably low in another state where custom permits a return of 9 per cent.

The report assumed that in Texas a 9 per cent return on the value of the plant, plus 1 per cent for depreciation, is fair to the city and just to the company. This enabled the writer to recommend a reduction of 20 per cent in the rates now charged. Such a reduction in rates will yield 9.8 per cent on the value of the plant, including depreciation, at the present time.

The city has by its charter the right to regulate and fix rates, as well as the right to purchase the plant at any time, but such right must not be exercised in such a way as to be tantamount to confiscation. The determination of future rates must be influenced by the experience of the past.

Scherzer ROLLING Lift Bridges cost less than other movable bridges because they are the *Extreme of Simplicity*.

Deep water-ways carry raw materials inland. Factories increase, population and land values go up. Railroads must distribute the finished materials away from the deep water-ways. Everyone is benefited because business is stimulated.



Scherzer ROLLING Lift Bridges are used **all over the world** because they use the only principle for moving a bridge that anyone would consider for moving any kind of land traffic. They ROLL (or rock) a short distance on **part** of a wheel, just as all land traffic rolls all distances on **whole** wheels.

But Scherzer ROLLING Lift Bridges have a great advantage over other ROLLING stock. They do not use friction-causing axles, trunnions and journals to support the bridge. Using only part of a wheel, they do away with this constant trouble and expense.



Scherzer Rolling Lift Bridge—Partly Open.
Newburgh & South Shore Ry., Cleveland, Ohio.

Scherzer ROLLING Lift Bridges ROLL upward and back **away** from the water, leaving the channel entirely clear in thirty seconds, also forming a signal and barrier against accidents. Or they roll forward and down, **closing** the channel in thirty seconds. Traffic has practically no interruption because Scherzer ROLLING Lift Bridges do not **start** to open until a vessel is almost upon them and they **close** before it is more than a few feet away.

Scherzer ROLLING Lift Bridges combine economy, simplicity, efficiency. They adapt to movable bridges the greatest mechanical principle—the ROLLING principle.

Scherzer Bridge foundations are simpler and cost less because Scherzer Bridges are simpler and weigh less than any other movable bridge.



Scherzer
ROLLING Lift Bridge Co.
Main office Monadnock Block Chicago, U.S.A.

Eastern Office
220 Broadway, N.Y.

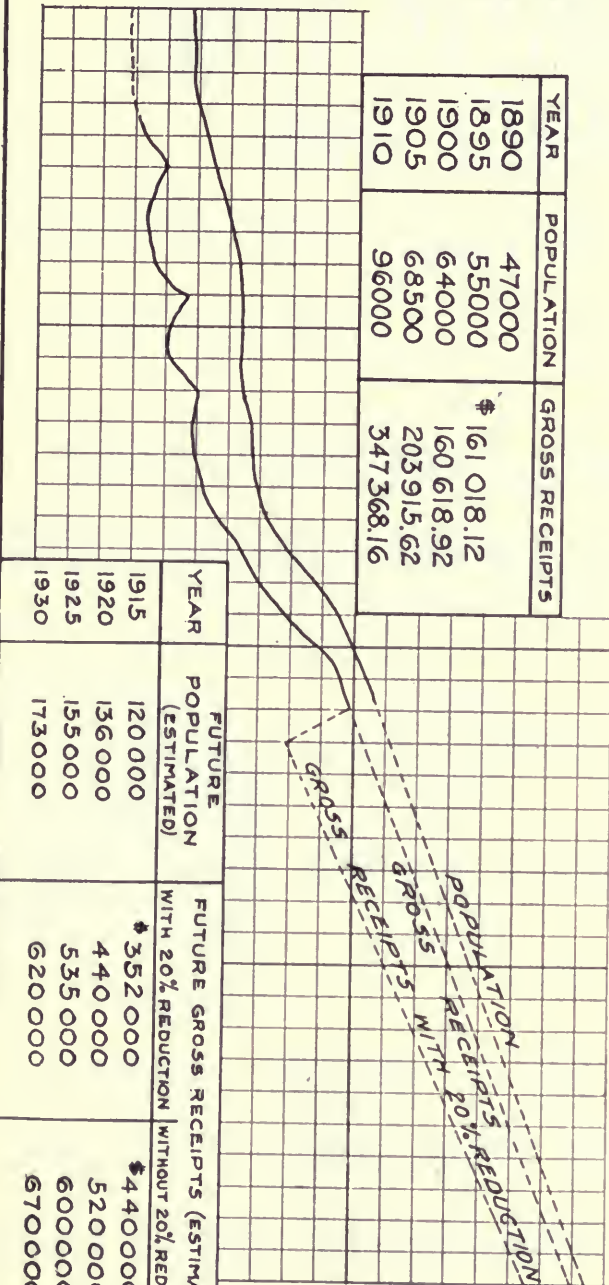
Cable Address
Scherzer Chicago

SAN ANTONIO TEXAS
1912 APPRAISEMENT OF WATER SYSTEM
RELATION BETWEEN

POPULATION AND GROSS RECEIPTS

50 CHURCH ST.
NEW YORK CITY
ALEXANDER POTTER
CONSULTING ENGINEER

| YEAR | POPULATION | GROSS RECEIPTS |
|------|------------|----------------|
| 1890 | 47000 | \$ 161 018.12 |
| 1895 | 55000 | 160 618.92 |
| 1900 | 64000 | 203 915.62 |
| 1905 | 68500 | 347 368.16 |
| 1910 | 96000 | |



| YEAR | POPULATION (ESTIMATED) | FUTURE GROSS RECEIPTS (ESTIMATED) WITH 20% REDUCTION | FUTURE GROSS RECEIPTS (ESTIMATED) WITHOUT 20% REDUCTION |
|------|---------------------------|---|--|
| 1915 | 120 000 | \$ 352 000 | \$ 440 000 |
| 1920 | 136 000 | 440 000 | 520 000 |
| 1925 | 155 000 | 535 000 | 600 000 |
| 1930 | 173 000 | 620 000 | 670 000 |

POPULATION
GROSS RECEIPTS

WAINWRIGHT GALVANIZED STEEL CORNER BAR

**FOR PROTECTING EDGES OF CONCRETE CURBS
STEPS, COLUMNS, ETC.**

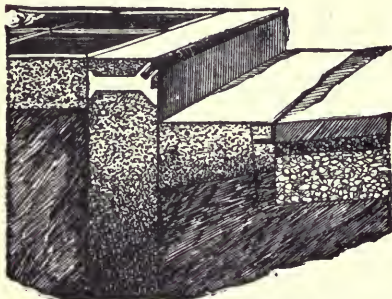
IT HAS A RECORD OF FOURTEEN YEARS' USE WITHOUT A FAILURE
THIS BAR IS SELF-ANCHORING, THE DOVETAILED WEB HOLDING IT
FIRMLY IN PLACE EVERY INCH OF ITS LENGTH

**"WAINWRIGHT
PATENTS"**

March 9, 1897
November 22, 1898
May 5, 1903
March 26, 1907
August 29, 1907
August 2, 1910

This bar has been in public use for more than fourteen years as the main feature of the

**WAINWRIGHT
STEEL-BOUND CONCRETE CURB**
ABSOLUTELY NON-BREAKABLE
CHEAPER THAN GRANITE



**GALVANIZED STEEL CORNER BAR PREVENTS
CHIPPING OR BREAKING ON EDGES**

**OVER
FIVE MILLION
FEET**
IN USE IN MORE THAN
**FOUR HUNDRED
CITIES**
IN THE UNITED STATES



**MECHANICALLY PERFECT AND
UNEQUALED FOR CURVED CORNERS**

**THIS CURB WILL STAND HARDER
USE AND LAST TEN TIMES AS LONG
AS PLAIN CONCRETE CURBING**

METAL PARTS FOR SALE.

SEND FOR COPYRIGHTED BOOKLET No. 1

STEEL PROTECTED CONCRETE CO.
Real Estate Trust Bldg., PHILADELPHIA, PA.

The diagram* on page 69, therefore, is of interest as showing the relation between growth in population and gross receipts from 1890 to 1912.

Meters

An important and rather unusual recommendation made in San Antonio advised against the universal use of meters. Only one-fifth of the total amount of water used in San Antonio and vicinity is supplied by the water company. There being many private wells supplying water to buildings and for irrigation purposes. The use of meters in San Antonio could not be counted upon to reduce the per capita draft more than 33 to 50 per cent. On the basis of 33 per cent, the universal use of meters would reduce the total draft upon the underground source of supply one-fifth of 33 per cent, or only about 7 per cent; whereas the cost of installing meters in San Antonio would be \$300,000. As there is no necessity of purifying the water, and as the coal cost for pumping water is only \$2.50 per million gallons, the saving effected by the lessened flow through the mains, together with the value of the conservation of the water in the underground reservoir, is not sufficient to justify a present expenditure of \$300,000 for the universal installation of meters.

* From this diagram it will be seen that the rate of growth in San Antonio was more or less uniform until the year 1905, and from 1905 to 1911 the rate of increase was markedly greater. The curve of gross receipts is somewhat irregular. The receipts prior to 1893 are estimated receipts; from 1893 to 1911 they are taken from the books of the company. The break in the curve beginning at 1895 was occasioned by a modification of the then existing contract, which called for the reduction of 25 per cent in the rates charged to private consumers. It will be noted from the curve that, notwithstanding this substantial reduction in rates, the curve returned to the normal in four or five years. The break in the curve of income indicated at 1899 to 1901 was occasioned by the loss of the Army Post as a customer of the company. The United States Government sunk its own wells and constructed its own water system at Fort Sam Houston.

As the recommendations for the improvements of the system and its enlargement and extension are based upon the assumption that the income will be received from rates from private consumers 20 per cent less than those now charged, it is of interest to note the relatively slight effect that the reduction of 25 per cent in rates in 1894 had upon the total receipts of the company. It is not assumed that there will be the same rapid return to the normal under the new rates, because in former years the company was not required to keep its plant tuned up to a high state of efficiency. There is, however, every indication that the sag will not be unduly protracted. This prediction is justified because, upon the completion of the improvements contemplated, the basis for paying for fire service is changed from the fixed lump sum to a tax of 0.9 of a mill, which means a progressive increase each year in the amount paid for such service. The proceeds from this tax will be sufficient to pay 6 per cent on all improvements recommended in the system. These betterments will, moreover, automatically enable the water company to secure more consumers without increasing the cost of production.

The state of Texas must, however, soon face the issue of providing legislation to conserve the waste of the underground waters now altogether too prevalent.

While recommending against the universal use of meters in San Antonio, on account of the cheapness with which a pure and abundant supply of water is obtained, the report urges that the company be vested with the broadest police powers to detect and prevent waste. Wherever waste is detected, meters may be made compulsory, and all impediment and red tape which would tend to render such a rule ineffective, have been removed under the new contract. As reasonable meter rates are established by the contract, the form of penalty cannot be reasonably objected to by water wasters.

Other Recommendations

The report recommends the establishment of an independent high service system at a cost of \$45,000. It recommends the construction of a 20,000,000 gallon service reservoir, circular in form and built wholly above ground with walls 32 feet high. This type of reservoir was originally designed by the writer. A similar reservoir has already been built and its economy established.

The report also recommends the installation of a system of reinforcing mains at an expense of \$236,000, and large feeder mains from the center of the city to the reservoir at an estimated cost of \$111,000.

City Approves Recommendations

While the writer was retained to make his investigations under the administration of the late Mayor, Bryan Callaghan, the report was not completed until after the Mayor's death. In the election of his successor which followed, the opposition party came into power. The newly-elected Mayor, A. H. Jones, at once referred the report to a special Citizens' Committee appointed by the Mayor. This committee of representative business men, after an exhaustive study of the report and recommendations made by the writer, unanimously recommended to Council the acceptance and adoption of the entire report and all the recommendations contained therein. The City Council accepted the report of the Citizens' Committee and the Public Utilities Committee of Council then made an independent and careful investigation. They also unanimously recommended to Council the adop-

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Street Sprinklers
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and Dust Laying
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The
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Corporation

South Bend, Indiana, U. S. A.

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- Visit the great Studebaker factories at South Bend and verify our statements as to their size and equipment.
- Follow Step by Step every part of a Studebaker vehicle, you would be convinced that no better construction—no better material—no better workmanship could be put into it.
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- Watch the numerous inspections of every part of our vehicle—in our lumber yard, and during each of the many stages through which it passes before becoming a finished vehicle.
- Prove for yourself by comparison with vehicles of other makes that our claims for superiority in every feature are well founded, and go over a vehicle point by point even to the minutest detail, you would find that it would bear your closest scrutiny.
- Do All This you would be thoroughly convinced and enthused over the Studebaker product.

To Do This would mean a visit to South Bend, but we have never had a visitor who, having once seen our plant, our methods and our organization, no matter how skeptical he may have been, but was convinced. You would be.

We Invite Your Closest Investigation of Our Factories and Products at Any Time. We Want the Chance to Prove Our Claims which apply to our entire product



ADV. 1718-A

tion of the recommendations and their incorporation in a contract to be drawn between the city and the water company, at the same time giving the water company thirty days in which to file their acceptance of the terms of the contract drawn by the

city, or in which to file specific objections to any of the provisions contained therein, before the new rates become effective. In this contract the city of San Antonio specifically reserves the right to purchase the water works at any time it may see fit.

Too Often the Case



A REAL ROLLER

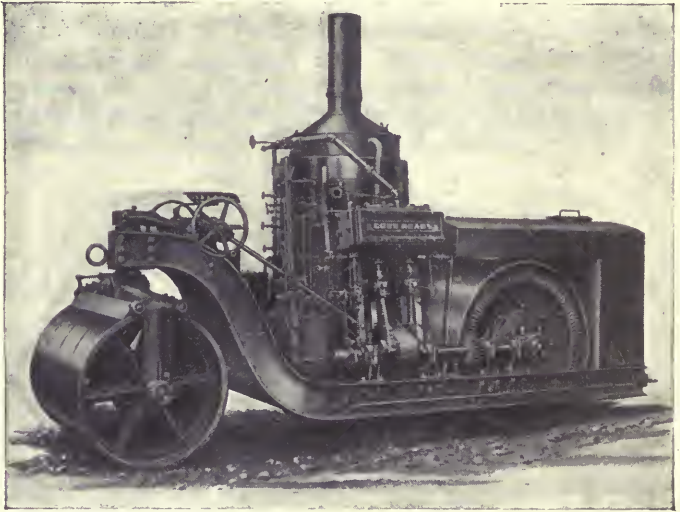
For towns and cities that want serviceable machines

The Monarch Tandem Roller

is better built, develops more power, is more easily operated and controlled, and will last longer than any other roller of this type.

This roller can be used in rolling park and cemetery drives, repairing brick and macadam streets, and in laying asphalt.

No town or city should be without a tandem roller. THE MONARCH is the roller.



The Monarch Tandem Roller.

HANDSOME CATALOGUE ON REQUEST

The Good Roads Machinery Co., Inc., Kennett Sq., Pa.



Road Oiling AND Street Sprinkling

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American Car Sprinkler Co.
WORCESTER, MASS.

Specialists on Road Oiling and Street Sprinkling



FIRE PROTECTION

The High-Pressure Fire Service of Baltimore

“**W**ITHOUT the big fire we would never have had this pipe line. With it we would never have had the fire. It is absolute protection against a repetition of the disaster of 1904.”

This is the comment of former Mayor Mahool of Baltimore on the high-pressure fire-fighting system which has been in operation in that city since May last.

The pumping station is of fireproof construction throughout, except floor surfacing and inside doors in the third story. The roof is of tar and gravel, and is designed to withstand the probable failure of the adjoining overhead walls. There are large windows on the front, protected by wired glass in metal frames and with rolling fire-shutters inside. The rear wall has a single door-opening protected by double fire-doors. Eight-inch risers have been extended to the roof, and monitor nozzles have been provided for, to sweep nearby buildings. There are also four three-inch connections with fire-hose and necessary pipes to permit the fighting of fire across adjoining roofs.

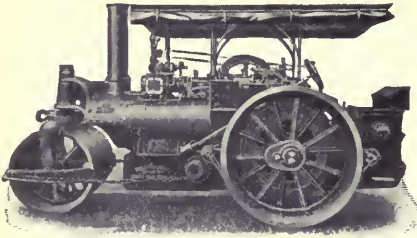
The pump room is two stories high, with a gallery on one side, and the quarters of the operating force above. The six engineers or machinists and the five stokers of this force hold state licenses and have had several years' experience. The men are organized as a fire company: a stoker and an engineer are on duty at all times, and other members respond to the operating floor on all alarms in the district covered by the service. The pumping station is provided

with the usual fire alarm equipment of fire stations, with extension gong in the sleeping quarters, which is normally cut out, being connected into the circuit after one round of a box in the district served by the high-pressure system.

There are three large Allis-Chalmers pumps and one smaller Epping-Carpenter. The three 680-horsepower Edgemoor water-tube boilers are equipped with Jones mechanical underfeed stokers. In addition to these pumps and boilers, there are duplicate



BALTIMORE HIGH-PRESSURE PUMPING STATION



Buffalo Pitts Macadam Roller

Buffalo Pitts Road Rollers

Our Macadam Rollers have made a record for durability and efficiency that is unequalled.

Used exclusively by the leading municipalities and contractors. Built in all sizes up to 20 tons. Write for catalogue.

Buffalo Steam Roller Company

Boston

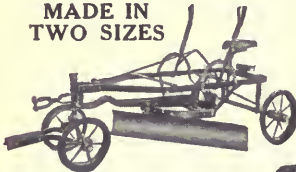
BUFFALO

New York

THE GLIDE GRADER NO 1 DITCHER NO 2 LEVELER NO 3

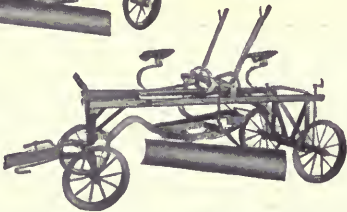
The Best All-Round Road Machine

MADE IN
TWO SIZES



NO. 1
Weight, 850 Pounds
2 Horses
1 Man

NO. 3
Weight, 1,100
Pounds
2 or 4 Horses
1 or 2 Men



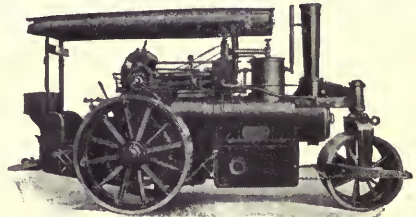
Two strongly built, powerful, light weight Machines that fulfill every requirement for leveling, grading and ditching. Will dig a V-shaped ditch from 20 inches to 36 inches deep. Flanged wheels. Will not skid. Pivot axle. Frame 30 inches from the ground. Direct lever connection with blade permitting instant operation.

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GLIDE ROAD MACHINE CO.

509 Huron Street MINNEAPOLIS, MINNESOTA

The ARISTOCRAT OF THE Road Roller World



STANDARD New York--Port Huron Rollers

cost a *little* more but they're *better*.

Designed by the most experienced mechanical talent in this country.

Built of the best materials money will buy. Above statements are true—provable facts.

"The Port Huron Line"

is pictured and described in Booklet No. 9. Ask for it.

PORT HURON ROAD MACHINERY WORKS

(Of course it does)

PORT HURON, MICHIGAN



IF you use dump wagons or if you are thinking of buying dump wagons send for illustrated description of the

Bain Dump Wagon

which meets every requirement.

BAIN WAGON CO.

Main and Pearl Sts. KENOSHA, WIS.

blowers and feed-water pumps, a traveling crane in the pump-room, a feed-water heater and other necessary appliances.

The layout of discharge pipes from pumps is on a loop system, gated so that the supply may pass through either or both of the two 24-inch distributing mains. The suction supply from a 30-inch cast iron main is connected to a 40-inch domestic supply main approximately 400 feet distant from the station. An auxiliary supply may be taken from the well in the station, connected by a 42-inch reinforced concrete conduit with the harbor, 250 feet distant.

At the station 150 pounds of steam is maintained on two boilers at all times, and 150 pounds water pressure is kept on the distribution system by the small pump. Upon receipt of an alarm in the high-pressure area, which extends about 400 feet outside the border line hydrants, steam is turned on two of the large pumps, which immediately raise pressure to 250 pounds; the small pump stops on water pressure exceeding 150 pounds. The larger pumps are provided with governors, which regulate the speed, and have steam valves controlled by pressure in the distribution system. With throttle valves open, the operation of the pumps is entirely automatic, and as stoking of the boilers and forced draft are automatically controlled by the steam consumption, the station can be run for several hours without attendants if necessary. An increase in the speed of the small pump indicates a flow from the system;



A HIGH-PRESSURE TEST IN BALTIMORE

orders are to shut down the pump if such flow occurs without a fire alarm sounding.

The area covered by the mains of the system embraces about 170 acres. The general plan followed provides 16-inch mains, three blocks apart in both directions, with 10-inch lines on all other streets. Blanked connections have been left at intersections on border streets to permit extending the system in all directions.

All pipe is lap-welded, soft, open-hearth steel, designed for a maximum working pressure of 300 pounds per square inch. The pipe lines, including valves, hydrants and other fittings, were tested and made tight at a pressure of 600 pounds per square inch before back filling. The



AUTO TRUCK, BALTIMORE HIGH-PRESSURE SERVICE

You Ought to See for Yourself

What Europe is Doing

Germany has long been noted for the efficiency of her municipal government, her city planning, her housing of the poor, her social insurance, her municipally-owned public utilities and her intensive use of inland waterways.

France is noted for the beauties of her capital, the philanthropy of her people, the success of her public works, her sanitation and public hygiene.

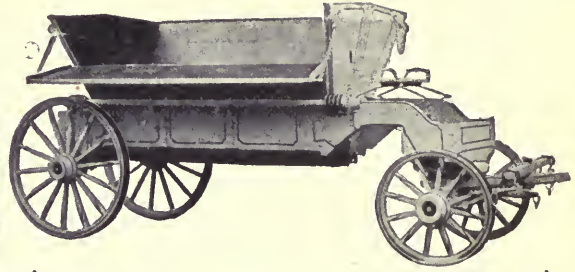
England is rapidly forging to the front with social insurance, with garden cities, with city planning and with a new brand of municipal democracy.

Holland, Belgium, Denmark and Scotland are doing things equally interesting and instructive.

These are things with which you ought to be personally acquainted. The tours which we have organized aim to study just these things. Let us send you fuller information. Address

DR. E. E. PRATT,
225 Fifth Avenue
New York City

Business Arrangements
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*Wagons owned
by the city always
get hard usage.*

This TROY
is Built
for Abuse.

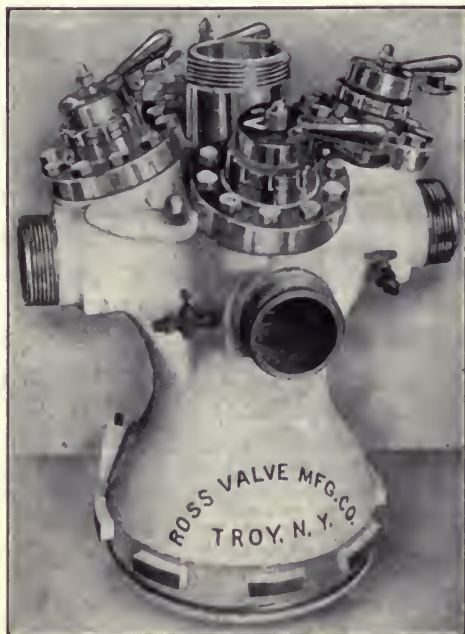
Nobody is interested in protecting municipal wagons. They are handled roughly all the time—overloaded and banged around. That's why we build TROY Municipal Wagons *extra strong*. City after city is paying more for TROYS—because they get more.

WRITE FOR CATALOGUE K

**THE TROY
WAGON WORKS
COMPANY**

Water St. Troy, Ohio

system of pipes is expected to be sufficiently elastic to remain tight under all conditions of service, including expansion and contraction due to changes of temperature, settlement and other disturbing factors. Provisions are made to avoid the effects of electrolysis by making the electrical conductivity of the joint approximately equal to that of the body of the pipe, and by a pipe coating of mineral rubber asphalt with a thickness of $1/32$ of an inch.



PORTABLE FIRE HYDRANT HEAD

The gate valves are of semi- and open-hearth steel, bronze-mounted, of a substantial double-disc type, painted inside and outside with asphalt paint; they were subjected to a test pressure of 600 pounds to the square inch. Valves are generally located on property lines, ordinarily four at each street intersection, so that, in all but two or three cases, any single side of a block may be cut out of service without interfering with service in other parts of the system.

All valves are enclosed in large concrete valve boxes, each built upon a concrete slab. Each valve box is provided with a key, which in operation cannot be removed from the valve except when it is wide open. There are relief valves at various points in the system, set to open and waste into the

sewers at 305 pounds pressure, and air valves are provided at all summits.

The hydrants are a specially designed flush type opening against the pressure, having 10-inch barrels, 28 square inches minimum water-way at valve opening, and 8-inch branch connection to the main. They are provided with a sidewalk cover, upon removal of which there can be connected a special portable service head, which locks into position by a slight turn. This was designed and made by the Ross Valve Manufacturing Company of Troy, N. Y., to meet the requirements of the Baltimore specifications. The head has four $2\frac{1}{2}$ -inch outlets, each provided with a regulating valve, designed to act also as a shut-off valve. A fifth opening in the top of the head is used for attaching a monitor nozzle. When the operating handle is turned full to the right, water is shut off; turning it to the left turns on the water, and to the pressure desired, by allowing the catch to drop in the proper notch.

A lock is also provided to prevent pressure greater than 100 to 125 pounds being put on a line without first having orders from the chief in charge. When it is unlocked, and the handle is turned full to the left, the full hydrant pressure of 300 to 350 pounds is obtained. The lock makes it safe to handle hose on ladders or inside of a building. The three-inch opening in the top of the head permits 3-inch lines to be connected and laid a considerable distance beyond the present high-pressure mains, thus extending the high-pressure fire zone. No regulation is attempted on this opening; full hydrant pressure only would be used. This opening is ordinarily covered with a screwed cap. Two grab-handles are provided. One man can readily lift the head and drop it in position. The heads are carried on the hose wagon or auto truck with the hose and other fire-fighting apparatus. Only a few heads are required to equip the entire department, while the stand-pipes or flush hydrants to which they can be attached may be numbered up in the thousands.

No connections have been made to equipments supplying private protection to buildings; in the use of the system it is the intention of the department to have the first company connect to all such equipments by means of short lines of hose from the hydrant to the outside connection, thus assuring positive control of the amount of water

300,000,000 WIRE-CUT-LUG BLOCKS



No. 3674. Buffalo-Glenwood Road. 21 miles long. New York State Highway. Constructed June, 1911. Photo June 8, 1912, at Station No. 369. 13 miles from Buffalo City Line.

Watch This List of Licensees Grow

| | | | |
|----------------------|---|-----------------------------------|--------------------|
| During the year 1910 | { | Corry Brick and Tile Co..... | Corry, Pa. |
| | | United Brick Co..... | Conneaut, Ohio |
| During the year 1911 | { | Kushequa Brick Co..... | Kushequa, Pa. |
| | | Sterling Brick Co..... | Olean, N.Y. |
| | | Reynoldsville Brick & Tile Co., | Reynoldsville, Pa. |
| | | Danville Brick Co..... | Danville, Ill. |
| | | Paterson Clay Products Co..... | Clearfield, Pa. |
| During 1912 | { | Wabash Clay Co..... | Veedersburg, Ind. |
| | | Clinton Paving Brick Co..... | Clinton, Ind. |
| | | Alton Brick Co..... | Alton, Ill. |
| | | Deckman-Duty Brick Co..... | Cleveland, Ohio |
| | | Tuna Valley Pressed Brick Co..... | Bradford, Pa. |
| | | Foster Paving Block Co..... | Bradford, Pa. |
| | | Metropolitan Paving Brick Co..... | Canton, Ohio |
| | | Bessemer Limestone Co..... | Youngstown, Ohio |
| | | Murphysboro Paving Brick Co., | Murphysboro, Ill. |
| | | Binghamton Paving Block Co... | Binghamton, N. Y. |
| | | Peebles Paving Brick Co..... | Portsmouth, O. |

The combined output of these companies is 300 million blocks annually, or enough to pave a sixteen foot roadway 750 miles long. Hundreds of cities already have admitted Wire-Cut-Lug Block in their specifications and the number of city engineers recognizing their merit is growing. See that your specifications are right. Wire-Cut-Lug Block never have been rejected where submitted. *Write us for further evidence.*

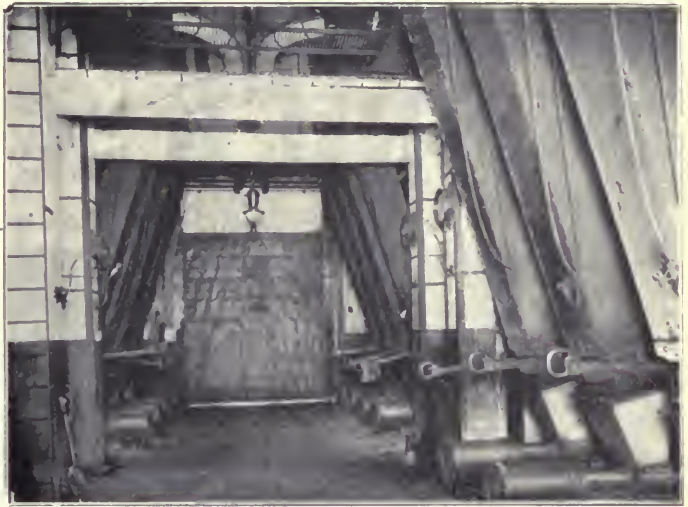
THE DUNN WIRE-CUT-LUG BRICK CO.
CONNEAUT, OHIO

PATENTED IN THE UNITED STATES AND FOREIGN COUNTRIES

and lessening water damage after the extinguishment of the fire. It is the opinion of the department that inasmuch as the high pressure system is intended primarily for serious fires, the system should not be weakened by connections other than to the hydrants; the department could not maintain proper control over such connections nor be assured that there were no leaks on the system.

Two high-pressure companies have been established, each manned by picked men of two to five years' fire service. Each company is provided with an automobile hose wagon carrying 2,000 feet of 3-inch hose, two hydrant heads, three turret nozzles and the usual assortment of shut-off nozzles and minor equipment. Tests made have shown that, starting from the middle of the street, two men could remove the hydrant cover, place the head in position and turn on the water in from 18 to 25 seconds.

On June 7, 1912, several tests were made by engineers of the National Board of Fire Underwriters of the readiness of the pumping station and its capacity, of the leakage of the system and of the power at the hydrant head. The details of these tests are



BOILER ROOM, BALTIMORE HIGH-PRESSURE STATION

given, together with the description of the service to which we are indebted, in the special report issued in June by the National Board of Fire Underwriters.

The illustrations for this article are furnished by courtesy of the Under-Feed Stoker Company of America.

There have been a number of conspicuous demonstrations of the system in actual use. In one of these, occurring during the latter part of December, the high-pressure service was connected to a stand-pipe on the fifteen-story building of the Fidelity Deposit and Trust Company, which also has outside sprinkler attachments covering the exterior of the entire building. The demonstration was a most successful one.

The high-pressure system covers the greater part of the congested value district, and not only adds greatly to its fire protection, but by lessening the number of engine companies needed to extinguish a serious fire within the zone covered, it materially increases the effectiveness of the fire department in covering other parts of the city in the event of a second fire. An extension of the system would, however, be of great value.

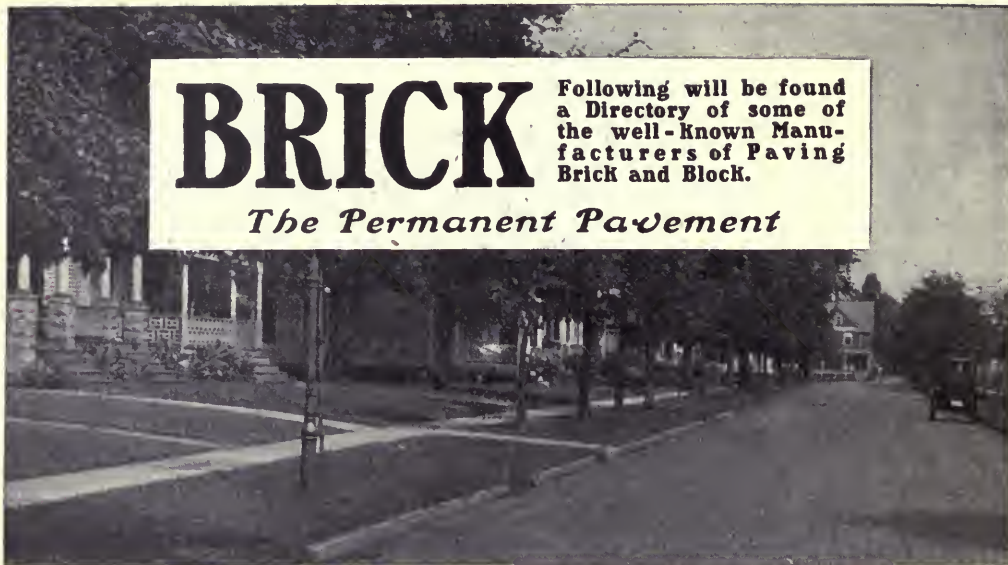


ENGINE ROOM, BALTIMORE HIGH-PRESSURE STATION

BRICK

Following will be found
a Directory of some of
the well-known Manu-
facturers of Paving
Brick and Block.

The Permanent Pavement



Alton Brick Company

Repressed Block and Dunn Wire-Cut-Lug Block

ALTON, ILL.



Bessemer Limestone Company

YOUNGSTOWN, OHIO

Repressed Bessemer Block and
Dunn Wire-Cut-Lug Blocks

BIG FOUR CLAY COMPANY

CITY NATIONAL BANK BLDG.

CANTON, OHIO



BINGHAMTON PAVING BLOCK CO.

BINGHAMTON, N. Y.

MANUFACTURERS OF THE FOSTER BLOCK

Made Under the DUNN WIRE-CUT LUG LICENSE

WORKS: BINGHAMTON, N. Y.

OFFICE: BRADFORD, PA.

CLEARFIELD BRICK MANUFACTURING CO.

Shale and Fire Clay Paving Block

TWO PLANTS

LARGE CAPACITY

CLEARFIELD, PA.

How to Interest School Children



Suggestions for Fire Department Officials and Others Having Opportunities for Addressing Boys and Girls on Fire Prevention



By Howard L. Stanton

Chief of Fire Department, Norwich, Conn.

THE writer has found by experience, in addressing boys' clubs and others, that to interest them they must be given more than dry facts and figures on the enormous fire losses of the country. It is important that the speaker impress on the children's minds the value of their support and assistance to the fire department in the fire prevention movement, by calling their attention to the necessity of knowing how to send in an alarm in case of fire in their own homes or in their parents' places of business. Once their attention is gained, children make a very appreciative audience.

There are many boys and girls attending the public schools between the ages of ten and fourteen years old who have foreign-born parents unfamiliar with the English language, who can teach their parents how to assist in preventing fires. Also the ordinances of the city and rules governing the handling of explosives, matches, etc., and the danger of the accumulation of rubbish in cellars, stairways, closets and on fire-escapes are taught through the children. These children, as a rule, are bright and teach their parents many of the laws govern-

ing the city, and they can be of great assistance with a little encouragement.

My plan has been, when called upon to talk to young people, to have a fire alarm box connected to a few cells of battery with a small gong or tapper on a table, so as to allow them to see the working of a fire alarm box and teach them how to send in an alarm from any alarm box. Instructions are also given them about the care that should be exercised in sending in a telephone call to the fire department by

speaking distinctly, and giving the proper location of the fire—the names of streets, such as Vine and Pine Streets and Fairmount and Clairmount Avenues, being easily misunderstood by telephone. I also have an empty three-gallon fire extinguisher, the use of which I teach to the children, explaining the reason why the acid and soda, when mixed with water, are of such value in fighting small fires. By teaching them how to do things and not devoting too much time to "don't do so and so," an impression is made and results produced.

Such a talk on fire matters by some official of the fire department is apt to do a great deal of good in assisting

A Practical Demonstration Which Has Occurred Since This Article Was Written

BOY PRACTICED FIRE LESSONS GIVEN IN SCHOOL.

Successfully Turned in Alarm from Box 14 for Blaze in Shed.

Philip Hertz, son of Frank Hertz, of 28 North Thames street, put into practice the lesson he had learned from Chief Stanton's instruction in the school by pulling in an alarm from box 14 about 9 o'clock Thursday night for a fire in a shed used for ice storage by James B. Bates near the Central Vermont tracks and at the rear of Slosberg's grain elevator. Philip got the alarm in all right, but cut his finger on the glass.

The shed blazed up brightly and attracted a big crowd. The fire department had two streams of water from the hydrant at the corner of Cove and North Thames street, which doused out the fire. They also turned water on a freight of baled hay standing alongside of the shed, and they had to do considerable chopping on the roof of the shed and on the freight car. The shed lost its roof. Through the quick response and work of the firemen, Chief Stanton was able to sound the recall about 9.15.

It was the second bell alarm on Thursday.—From the *Norwalk Bulletin*, December 6 1912.

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the fire prevention movement, which has come to be recognized as an economic question which concerns every man, woman and child in the country. From the writer's point of view it is the children of to-day who should be instructed what to do to assist in the fire prevention movement to show results ten years hence. Many very valuable "don'ts" have been printed and distributed throughout the country to which should be added some things to do.

The following list of "Please learn to" and "Please don't" were used in a recent talk to boys. Such lists should be committed to memory by the children, and much more good advice could be added. The advice is, of course, intended for adults as well as for children, and, if observed, will help in keeping the fire losses down to a minimum, thus assisting fire departments which are in sympathy with the fire prevention movement.

Please LEARN to

- locate the fire alarm box nearest your home.
- send in an alarm from any box in the city in case of fire.
- ask any officer or member of the fire department, who will instruct you.
- stay near the box when pulled for fire to direct firemen.
- look up the telephone number of the fire station nearest to your home.
- have the telephone number on a card near the 'phone.
- speak distinctly when calling the department by 'phone.
- give the location of fire, not say "Come up to my house quick."
- use a fire extinguisher; own one if possible.
- have two six-quart pails. If needed, they are handy.
- look for exits in theaters, halls and public buildings.
- keep on the sidewalk when apparatus is going to a fire.
- give the right of way to the fire department when it is responding to alarms.
- look on printed fire alarm cards for instructions and signals.
- judge which is best in case of fire, a telephone call or box alarm.
- give the firemen credit when they deserve it.
- realize that the fire department is ready at all times to respond to fires within thirty seconds after any alarm is sent in. That delay in sending in an alarm is responsible for nearly every large fire that occurs in every city. That with snow on the ground and a two-mile run up hill the department must be notified quickly to be of any service. The most efficient service is rendered if the department arrives within three minutes after the fire breaks out. Finally, help the fire prevention movement by assisting the fire department in preventing fires, and should a fire occur send in an alarm quickly.

Please DON'T

- go into closets looking for clothing with a lighted match.
- kindle fires in stoves with kerosene.
- put hot ashes and coal in wooden barrels or boxes.
- thaw out frozen water pipes with a torch or lamp.
- allow waste paper, excelsior and rubbish to collect.
- use gasoline for cleaning in a closed room.
- look for gas leaks with a match or lamp.
- allow lace curtains near gas brackets.
- allow oily rags near stoves or about the premises.
- allow sawdust to be used in cuspidors or on floors.
- throw waste paper on a fire in a fireplace.
- throw cigarettes or cigars away if lighted.
- keep matches in paper boxes or lying about carelessly.
- hang your clothing near open fires or stoves.
- use snapping parlor matches. Taboo them.
- fill lamps after dark and never when lighted.
- allow rubbish in hallways or on fire escapes.
- burn leaves and dead grass on windy days.
- forget to have the chimneys of your home cleaned each year.
- forget that matches are the beginning of many conflagrations.
- fail to look twice at everything that looks like fire.
- fail to notify the Chief of the Fire Department of anything you may see that is dangerous and liable to cause fire, remembering that every day is fire prevention day.

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A TEXT-BOOK ON ROADS AND PAVEMENTS. By Frederick P. Spalding, Professor of Civil Engineering, University of Missouri. Fourth edition, revised and enlarged. John Wiley & Sons, New York. 1912. xi + 408 pp. Illustrated. \$2.00, postpaid.

The new editions of this work have brought it up to date in dealing with the problems due to new kinds of traffic and the public demand for more careful and scientific study of materials and methods. In the present edition there are new chapters on bituminous macadam and concrete pavements, and changes have been made in the chapters on brick, asphalt and wood pavements. The style of the book is simple and direct. Its purpose is to discuss from the engineering standpoint the elementary *principles* of successful highway construction, and to outline the more important systems in use, rather than to give a mass of detailed examples and statistics of such work. Two chapters deal with the location, improvement and maintenance of country roads.

BOUNDARIES AND LANDMARKS. A Practical Manual. By A. C. Mulford. D. Van Nostrand Company, New York. 1912. 89 pp. Illustrated. \$1.00. Postpaid.

This book is not designed as a mere handbook for the surveyor. In the chapter entitled "Responsibilities of the Surveyor" the author expresses the dignity of the profession of surveyor, which "deals with one of the oldest and most fundamental facts of human society—the possession and inheritance of land."

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THE PHYSICAL TESTING OF ROCK FOR ROAD BUILDING. Including the Methods Used and the Results Obtained. By Albert T. Goldbeck, Testing Engineer, Office of Public Roads, and Frank H. Jackson, Jr., Assistant, Office of Public Roads. Bulletin No. 44, Office of Public Roads, United States Department of Agriculture. June 10, 1912. 96 pp. Illustrated. 15 cents postpaid.

Embodying the results of all tests conducted in the Office of Public Roads since its establishment, and in the Massachusetts Highway Commission Laboratory at Harvard University previous to 1900.

ROADS, PATHS AND BRIDGES. By Logan Waller Page, Director United States Office of Public Roads. Sturgis & Walton Company, New York. 1912. vii + 263 pp. Illustrated. 75 cents. Postage, 9 cents.

ORGANIZATION, POWERS AND DUTIES OF HEALTH AUTHORITIES. An analysis of the Laws and Regulations Relating Thereto in Force in the United States. By J. W. Kerr, Assistant Surgeon-General, and A. A. Moll, A. B. Prepared by direction of the Surgeon-General. Public Health Bulletin, No. 54, August, 1912. 452 + v pp.

Covering the present organization of state health authorities, their powers and duties (investigative, executive, advisory, educational, quasi-judicial and quasi-legislative); the relation of state and local health authorities and their cooperation with the Federal authorities; the organization and functions of county, township and municipal, etc., boards of health; the text of state and territorial laws relating in general to the organization and powers of health authorities, and court decisions as to the appointment, composition, powers and compensation of health boards.

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SPIRITUAL CULTURE AND SOCIAL SERVICE. By Charles S. Macfarland, Secretary, The Federal Council of the Churches of Christ in America. Fleming H. Revell Company, New York. 1912. 222 pp. \$1.00. Postage, 8 cents.

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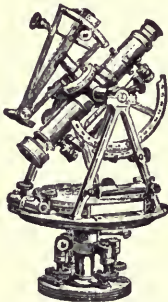
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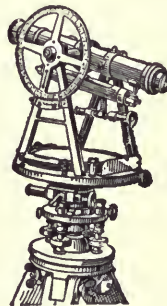
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SOURCES OF MUNICIPAL REVENUES IN ILLINOIS. By Lent Dayton Upson, Ph. D., Sometime Fellow in Political Science, University of Illinois. Published by the University of Illinois, Urbana, Ill. 1912. 126 pp. 32 tables. 1 map. 75 cents, postpaid.

One of the "University of Illinois Studies in the Social Sciences." The budgets of twenty-four cities of over 8,000 population (excluding Chicago) were examined in this study, part of the purpose of which is to show the means of revenue which are not fully utilized. Complete statements were secured from all but three of the cities examined, covering the revenues for general purposes. The material is arranged according to the plan employed by the Bureau of the Census for tabulating the statistics of cities. Considerable information is included which is not directly concerned with city budgets, but is important to the permanent betterment of cities—such data as the cost of operating municipal water and light plants, the time and date of expiration of public service franchises, the rates of license taxes, and the relation between the number of liquor licenses and the number of police.

FOLK FESTIVALS. THEIR GROWTH AND HOW TO GIVE THEM. By Mary Master Needham. B. W. Huebsch, Publisher, New York. 1912. xi + 244 pp. \$1.25. Postage, 10 cents.

The author has chosen the material for her book "with the idea that it may create a desire to give festivals, and at the same time furnish a working basis for them." Here is a lively and searching record of real festivals and pageants, of their basis in history and tradition, and of their value and effect. The vivid, picture-making quality of the book gives evidence of the author's experience and constructive power. A list of book and periodical references on pageantry is given.

CIVICS IN SIMPLE LESSONS FOR FOREIGNERS. By Anna A. Plass, Teacher of English to Foreigners in Day and Evening Schools, Rochester, N. Y. D. C. Heath & Co., Boston. 1912. vi + 187 pp. Illustrated. 50 cents, postpaid.

This text-book is an important tool in the work of molding the foreigner into the loyal American citizen. In simple language the foreigner's earliest interests are first taken up—the features of our government which he sees on the street and in the home. This leads to a study of the purposes of our laws and of the fundamental principles of our government and its essential outlines, to the important facts of our history and to the choosing of officers, methods of registration and voting, and the legal requirements for naturalization, with the blank forms used in the process and the usual questions asked. There is a vocabulary of Italian, German, Swedish, French, Polish, Greek and Yiddish equivalents of all the words used in the book.

CITY SMOKE ORDINANCES AND SMOKE ABATEMENT. By Samuel B. Flagg. Bulletin 49, of the Bureau of Mines. 1912. 55 pp.

AMERICAN CIVIL ENGINEERS' POCKET BOOK. Second edition, enlarged. John Wiley & Sons, New York. 1912. viii + 1473 pp.; 1,200 cuts; 500 tables. \$5 postpaid.

This new edition embodies important changes, as follows: Two new sections, on steam and electric engineering, and the construction and maintenance of highways and streets; additions to the chapter on Earthwork Computations; a revision of the chapter which formerly treated of roads and railroads, with new material, so that it now treats entirely of steam and electric railroads; correction of errors, ambiguities and deficiencies; the index revised and reset; 23 articles, 43 tables and 18 cuts more than in the first edition. The section heads are: Mathematical Tables; Surveying, Geodesy, Railroad Location; Steam and Electric Railroads; Materials of Construction; Plain and Reinforced Concrete; Masonry; Foundations, Earthwork; Masonry and Timber Structures; Steel Structures; Hydraulics, Pumping, Water Power; Water Supply, Sewerage, Irrigation; Dams, Aqueducts, Canals, Shafts, Tunnels; Mathematics and Mechanics; Physics, Meteorology, Weights and Mechanics; Steam and Electric Engineering; Highways and Streets.

PROCEEDINGS OF THE FOURTH NATIONAL CONFERENCE ON CITY PLANNING. Boston, Mass., May 27-29, 1912. x + 232 pp. \$2.00, postpaid.

Containing in full the principal papers read at the Conference, and condensations or summaries of the discussions. The subjects dealt with by the papers include the following: The meaning and progress of city planning and the means of financing it; the attitude of the engineer toward the matter; city planning in a number of cities, large and small; land condemnation for public use; housing; city planning legislation; regulation of the height of fireproof commercial buildings, and the application of the "zone system."

NEWARK STUDY—NEWARK IN THE PUBLIC SCHOOLS OF NEWARK. A Course of Study on Newark, its Geography, Civics and History, with Biographical Sketches and a Reference Index. Prepared by J. Wilmer Kennedy, Assistant Superintendent of Schools. Published by the Board of Education of Newark, N. J. 1911. xiii + 213 pp. Illustrated.

THE CHILD IN THE CITY. A series of papers presented at the conferences held during the Chicago Child Welfare Exhibit. Published by the Department of Social Investigation, Chicago School of Civics and Philanthropy. 1912. xiii + 502 pp. Illustrated.

COMMON DRINKING CUPS AND ROLLER TOWELS. An Analysis of the Laws and Regulations Relating Thereto in Force in the United States. By J. W. Kerr, Assistant Surgeon-General, and A. A. Moll, A. B. Public Health Bulletin No. 57. August, 1912. 30 pp.



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OPEN-AIR SCHOOLS FOR THE PREVENTION AND CURE OF TUBERCULOSIS AMONG CHILDREN. By B. S. Warren, Passed Assistant Surgeon, United States Public Health Service. Prepared by direction of the Surgeon-General. 1912. 20 pp. Illustrated.

THE BUSINESS OF BEING A WOMAN. By Ida M. Tarbell. The Macmillan Company, New York. 1912. ix + 242 pp. \$1.25. Postage, 8 cents.

THE WOMAN MOVEMENT. By Ellen Key. Translated by Mamah Bouton Borthwick, A. M. With an Introduction by Havlock Ellis. G. P. Putnam's Sons, New York. 1912. xvii + 224 pp. \$1.50. Postage, 10 cents.

PROGRESS AND UNIFORMITY IN CHILD LABOR LEGISLATION. A Study in Statistical Measurement. By William F. Ogburn, Ph. D., Instructor in History, Politics and Economics, Princeton University. Published by Columbia University. Longmans, Green & Co., Agents. 1912. 219 pp. \$1.75. Postage, 8 cents.

GARDEN CITY MOVEMENT UP-TO-DATE. By Ewart G. Culpin, Secretary to the Garden Cities and Town Planning Association. Published by the Association. 1912. 63 pp. Illustrated. 25 cents.

A SUGGESTED SLIDING SCALE OF DIVIDENDS FOR STREET RAILWAYS DETERMINED BY QUALITY OF SERVICE. A Paper read Before the Meeting of the National Municipal League in Los Angeles, Cal., July 10, 1912. By James W. S. Peters, Kansas City, Mo. 9 pp.

TAXATION OF LAND VALUES AS IT AFFECTS LANDOWNERS AND OTHERS. By John Orr, M. A. P. S. King & Son, London. 1912. xi + 116 pp. 25 cents.

PRESENT SANITARY CONDITION OF NEW YORK HARBOR AND THE DEGREE OF CLEANLINESS WHICH IS NECESSARY AND SUFFICIENT FOR THE WATER. Report of the Metropolitan Sewerage Commission of New York. August 1, 1912. 457 pp. Many tables and diagrams.

A PLAN OF THE CITY OF HARTFORD. Preliminary Report by Carrère & Hastings, Advisory Architects to the Commission on the City Plan of the City of Hartford, Conn. 117 pp. Views, plans and diagrams.

CHILD LABOR IN CITY STREETS. By Edward N. Clopper, Ph. D., Secretary of National Child Labor Committee for Mississippi Valley. The Macmillan Company, New York. 1912. vii + 280 pp. \$1.25. Postage, 7 cents.

THE BOY AND HIS CLUBS. By William McCormick, Olivet Boys' Club, Reading, Pa. With a Foreword by Thomas Chew. Fleming H. Revell Company, New York. 1912. 96 pp. 50 cents. Postage, 6 cents.

STATE AND MUNICIPAL REGULATIONS FOR THE QUALITY, DISTRIBUTION AND TESTING OF ILLUMINATING GAS. Circular of the Bureau of Standards. S. W. Stratton, Director. No. 32. Issued April 1, 1912. 133 pp.

REPORT OF THE COMMISSION ON MILK STANDARDS APPOINTED BY THE NEW YORK MILK COMMITTEE. Reprint from Public Health Reports of May 10, 1912. 31 pp.

FRESH AIR AND HOW TO USE IT. By Thomas Spees Carrington, M. D., Assistant Secretary of the National Association for the Study and Prevention of Tuberculosis. Published by the Association. New York, 1912. xviii + 250 pp. \$1 postpaid.

FATIGUE AND EFFICIENCY. By Josephine Goldmark, Publication Secretary, National Consumers' League. Charities Publication Committee, New York. 1912. xiv + 342 pp. Diagrams and many tables. \$2 postpaid.

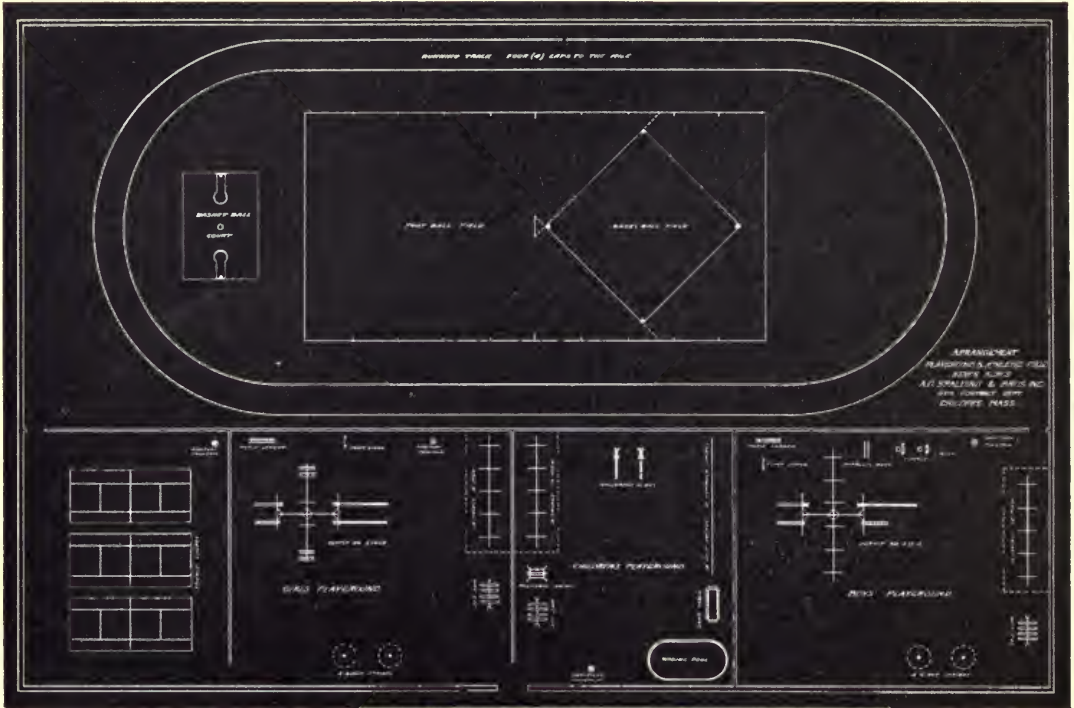
OPEN-AIR CRUSADERS. A Story of the Elizabeth McCormick Open-Air School, Together with a General Account of Open-Air School Work in Chicago and a Chapter on School Ventilation. Edited by Sherman C. Kingsley, General Superintendent of the United Charities of Chicago. Published by the United Charities of Chicago. 1911. 112 pp. Many illustrations. 50 cents postpaid.

PRIMER OF SANITATION. Being a Simple Work on Disease Germs and How to Fight Them. By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia. World Book Company, Yonkers-on-Hudson, N. Y. 1912. vi + 200 pp. Illustrated, 50 cents. Postage, 10 cents.

PRINCIPLES OF PUBLIC HEALTH. A Simple Text Book on Hygiene Presenting the Principles Fundamental to the Conservation of Individual and Community Health. By Thos. D. Tuttle, B. S., M. D., Secretary and Executive Officer of the State Board of Health of Montana. World Book Company, Yonkers-on-Hudson, N. Y. 1910. vi + 186 pp. 40 cents. Postage, 8 cents.

A REPORT ON VOCATIONAL TRAINING IN CHICAGO AND IN OTHER CITIES. By a Subcommittee of the Committee on Public Education, 1910-1911, of the City Club of Chicago. Published by the City Club of Chicago. 1912. xiii + 315 pp. Many tables and diagrams. \$1.50 postpaid.

THE FAMILY IN ITS SOCIOLOGICAL ASPECTS. By James Quayle Dealey, Ph. D., Professor of Social and Political Science in Brown University. Houghton Mifflin Company, Boston. 1912. iv + 137 pp. 75 cents. Postage, 6 cents.



PLANS

typical of other playgrounds frequently prove of great help in arranging new ones. Years of work in outfitting practically the playgrounds of the country have developed references that might well serve you in the selection of your equipment. Write us your problem—our attention thereto is yours for the asking.

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THE FOREIGN DEPARTMENT

A Record of Municipal Progress Abroad

Conducted by Edward Ewing Pratt, Ph. D.

THE AMERICAN CITY offers this new department to its readers with a view toward keeping them informed as to the progress of municipal affairs in other countries. It is frankly recognized that conditions in the United States are quite different from conditions in Europe. There is no thought that American cities should or can slavishly follow the examples of foreign cities as set forth in these columns. Things of interest in the cities of other countries will be noted, but only to serve as suggestions. We have to thank our foreign cousins for trying out many innovations in the science of municipal government. We in America have profited in some degree by their failures, have adopted many of their successful ideas, and in other directions their experiences may give just the hint which can be successfully adapted to our own conditions.

There is no better gauge of the importance and activity of this work in Europe than the number and excellence of foreign periodicals treating of city problems and municipal progress. These periodicals are already so successful that in some cases separate parts of municipal government are treated by separate periodicals. To them we are and shall be indebted for much of the information used in this department.

We hope that these pages will be of special aid to adventuresome Americans who go abroad to study civic and social problems. Each year a larger number of municipal officials, social workers and public-spirited citizens go to Europe and see at first-hand the progress that has been made there. They come back to us with glowing accounts of what they have seen. We shall aim in this department to give to the careful foreign traveler the gist of the important municipal undertakings which he may study, while at the same time helping the man at home to profit by what is going on abroad. Our purpose is to record, subject by subject, the history of municipal science in the making. We especially seek the cooperation of our readers, who, we hope, will suggest what fields are of special interest to them and what special facts they would like to obtain.

The International Housing Conference of 1913

The Dutch Government has extended a formal invitation to the International Housing Congress to hold its tenth meeting during September, 1913, at the Hague. The invitation has been accepted on behalf of the Congress, and Holland will, therefore, be the next meeting place of this now very important body.

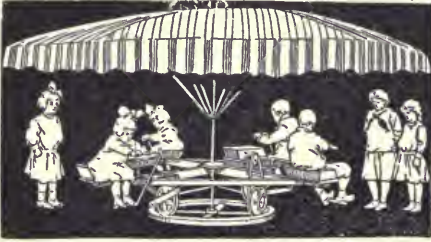
The points to be discussed at this next conference are: (1) Rural Housing; (2) The Improving and Clearing of Slums; (3) Overcrowded Dwellings; (4) Town Planning. The topics will be considered primarily in regard to Holland's own problem. To this end every opportunity will be afforded the members of the Congress to see rural and urban Holland, not only that they may get a fair idea of the beauty of this little country, but that they may be able

to make practical suggestions to the government regarding improvement of housing conditions.

Under the Town Planning Act

Under the Town Planning Act of 1909, England made the beginning of an experiment in city building which seems especially well fitted to British institutions. In essence, the law established, under the supervision of the Local Government Board, a central town planning department, which has authority to plan and lay out areas which are likely to be built upon.

After three years of experience we have a report of the operation of the act and the proceedings under it. The results have been entirely satisfactory, and the number of proposed town planning schemes attests its popularity. No small part of the success has been due to the tactful energy



The Health Merry-Go-Round

furnishes ENTERTAINMENT, EXERCISE and HEALTH for the children.

Especially adapted to the needs of Parks, Playgrounds, Schools and Kindergartens.

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Built in four, six and twelve-seated size, with and without canopy. Equipped with organ, if desired.

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Guaranteed to last 20 years

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TOTHILL'S PATENT PLAYGROUND APPARATUS

Strongest, Safest, Most Durable Manufactured

Tothill's Patent Playground Apparatus adopted and used exclusively by the City of Chicago

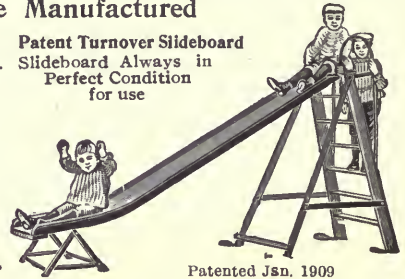
W. S. TOTHILL

Established 1875

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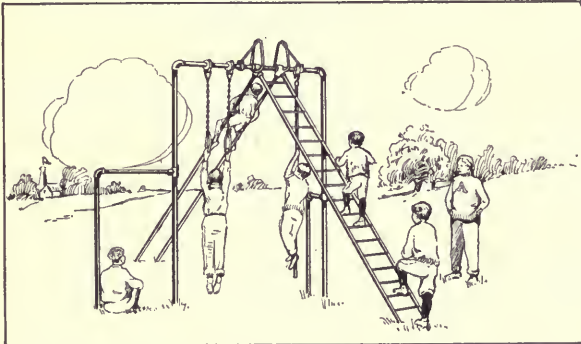
Patent Turnover Slideboard
Slideboard Always in
Perfect Condition
for use



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EVERWEAR ALL-STEEL GALVANIZED PLAY OUTFITS

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A popular and well-known piece of apparatus for Parks, Playgrounds, etc. Ball and roller bearing, and equipped with 8 all-steel ladder handles and chains. Furnished for either steel or wooden post.

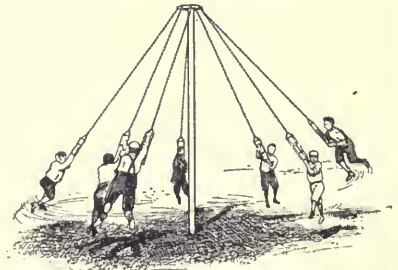
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The EVERWEAR MFG. CO.

Manufacturers of All-Steel Playground Apparatus
SPRINGFIELD, OHIO.

Especially adaptable for small ground space and where rapidity of action is desirable—one child making way here for the other quickly. Exercise and entertainment are continuous. Detachable swing may be suspended from flying rings. Our Catalog H-2 contains many suggestive designs of outdoor gymnasias.

Giant Stride



"IT'S ALL IN THE BEARINGS"

of the Local Government Board's town planning expert, Mr. Thomas Adams.

Three town planning schemes have been submitted to the Local Government Board for approval; 17 local authorities have been authorized to prepare such schemes; one corporation has been permitted to go ahead with its plan, and at present the Board is considering 12 applications from the local authorities for permission to prepare schemes. Two of the most advanced plans are parts of the great urban development of Birmingham. The amount of land involved in the proposals just mentioned amounts to over 52,000 acres. Besides these different proposals the Board has knowledge of 49 local authorities who are considering making formal application to be permitted to submit town planning schemes.

This is certainly an encouraging outlook for the towns of England. It shows a tremendous civic alertness, and proves what effective strides England is taking toward reaching a saner, more beautiful and more practical urban development.

Three Garden City Schemes in Far-Away Lands

The garden city movement has penetrated even Darkest Africa. A "garden city" has been started in the Nairobi district and is called Muthaiga. Aside from the plan, which has been laid out in advance, there is no adoption, however, of the fundamental principles of the garden city. It seems—although we hope it is more—to be only an exploitation of the name, and not a real garden city.

Another town now in the process of making is the state garden suburb of Sydney, New South Wales, which will be called Daceyville. The government realizes that Australia is confronted with a very serious housing problem, and has created a Housing Board to which considerable authority has been given. Sydney's housing problem was recognized as especially acute, and the government wisely decided to give relief where it was most necessary. The suburb will cover an area of 336 acres and will have all necessary public buildings and institutions as well as model cottages. Provision has been made for wide roads, open spaces and a park of 32 acres. The whole project will be owned and controlled by the state, and the hundreds of applications

which are being received for the 50 cottages under construction seem to insure its success.

Jerusalem is also to have a garden city. The housing problem has already received considerable attention in the Holy City, and the success of a colony outside of Jaffa has encouraged the backers of the scheme. The houses are designed especially for the better class of artisans. It is calculated that such houses with half an acre of land each can be provided for about \$1,000 and rented for between \$40 and \$50 a year. Those who are interested in the plan not only want to aid the poorer folk in this way; they are also anxious to preserve the beauty of the hills around Jerusalem and to do away with the slums which are spreading rapidly around the houses of the wealthier Jews.

Municipal Employment Bureaus for France

The French government passed a law in 1904 authorizing the establishment of free municipal employment bureaus. Nothing was done about the matter until last year, when the Minister of Labor aroused new interest in the establishment of these bureaus, which had been worked out so successfully in Germany, Belgium, Switzerland, etc. He invited the prefects to consider the matter, and the Prefect of the Seine has been instructed to present definite plans to the Municipal Council for the establishment of such a bureau in one of the districts of Paris. The plan is to conduct the bureau on very democratic lines, to have it controlled by a commission composed of the workmen and employers, and presided over by a man of special qualifications, who is neither workman nor employer.

Superannuation

The Liverpool City Council has voted to include in the next Parliamentary Bill a scheme of superannuation for employes of the municipality. The town clerk has made very clear the advantages of such an act, in a short summary, the main features of which are:

1. It will secure more efficient service.
2. The best men will be attracted to the service and superannuation will prevent their leaving.
3. It will obviate paying full salaries to officials who no longer give efficient service.
4. It is cheaper for ratepayers to pay mod-

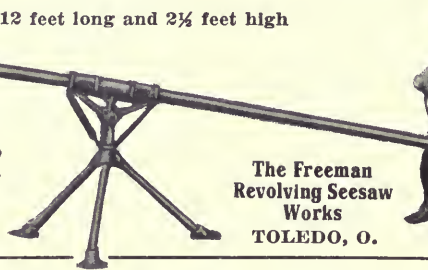
Something New—A Revolving Seesaw

This is one of the most attractive pieces of playground apparatus ever put on the

12 feet long and 2½ feet high



Many cities have ordered from 10 to 50 of these machines for Public Playgrounds.



The Freeman
Revolving Seesaw
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TOLEDO, O.

market. It immediately appeals to the children. Made entirely of steel pipe and malleable iron castings, it is practically indestructible. Weighs 90 pounds and assembled with 9 bolts.

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SEE THAT SMILE?

THE NATIONAL ROL-A-GIG

MAKES HAPPY BIG CHILDREN
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Keeps the children off the streets, away from street cars, automobiles, etc. Absolutely void of danger whatsoever. It makes strong, happy and satisfied children. They never tire of it. Fathers and mothers all agree that the Rol-A-Gig is just it. You'll say the same.

Before making any further plans for playground apparatus be sure to write for our Rol-A-Gig circular containing illustrations and further particulars.

MANUFACTURED EXCLUSIVELY BY

The National Amusement Construction Co., Toledo, Ohio



DRESS UP YOUR PARKS with High-Grade Nursery Stock

Some inexperienced public officials may think that all nursery stock is alike—but those who have "been there before" know differently. We have issued a handsome catalogue of our high-grade trees and shrubs for the benefit of those who are interested in securing the *best results* in improving public or private grounds. Send us your lists.

AMERICAN NURSERY COMPANY, Suite 522, 149 Broadway, New York

erate superannuation allowances than to receive inefficient service from superannuated officers.

5. It is an economical necessity in the employe's interest that public officials who are incapacitated by old age or sickness should be provided for in some manner.

The movement has been well received, and although the difficulties in the way are great, it will probably result in greater and increasing efficiency among the employes of the corporation of Liverpool.

Vagrants and Insurance Act

One result of the English Insurance Act has already come to light. The act, which went into effect on July 15th, provides for the insurance of English workmen against sickness, accident and death, and, in the engineering trades, against unemployment.

Several districts which have made inquiries regarding vagrancy have found the number of vagrants has noticeably diminished since the introduction of the act. In certain Yorkshire and Leeds districts vagrancy has fallen off 40 per cent. The number of inmates in the Leeds workhouse has decreased 30 per cent, and at Holbeck Workhouse the number of vagrants has decreased by about a thousand during the last half year.

The man who is really out of a job has only to produce his insurance card properly stamped to prove his sincerity. Thus the local officials can deal justly with their applicants, and it is a great protection, not only to the local authorities, but also to men who are honestly seeking employment. This excellent result of the act is a reassuring one to many who were dubious as to the wisdom of the policy.

Fighting the Billboard Nuisance

Acute as the billboard problem is in America, it is even more acute abroad. France is taking drastic measures to do

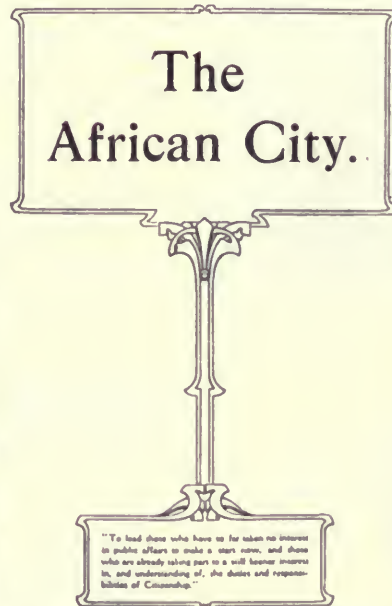
away with these eyesores, and Switzerland, Austria-Hungary, Denmark and Holland are modelling their legislation on the French law. The French Government has concluded to put such a high tax on billboards as to make their use practically prohibitive. The tax on an advertisement one meter (39 inches) square will be \$10 a year and on a sign 5 meters long and 2 meters high will be \$100. On some of the great signs already in existence the tax will amount to \$1,200 or \$1,500. The multitudes of small poster advertisements seen at their worst in European railway stations are almost as unsightly as the large billboards seen in the country districts. France expects that this new law will prove effective to the point of the almost complete abolition of outdoor advertising.

A German City Carries its Own Insurance

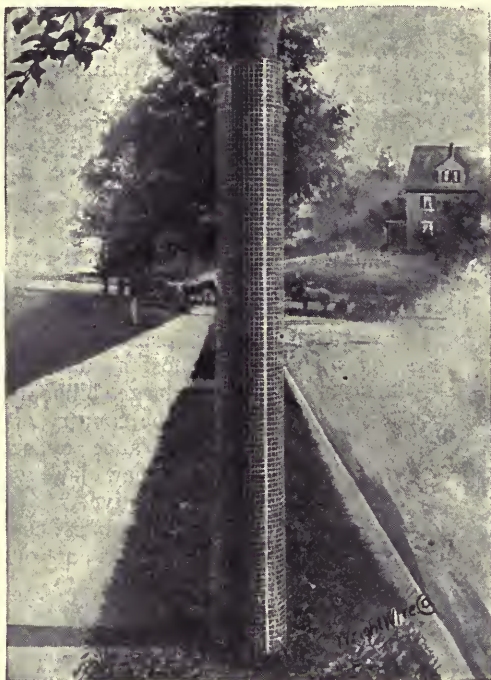
The city of Halle-a-Saale has for some time been conducting an interesting and instructive experiment in carrying its own insurance. This was begun in 1907, and since that time, with only a few exceptions, all the property of the city has been so insured. The total appraisal value of some 107 different buildings is now over \$5,000,000; these include the gas and electric works, the slaughter

house, the municipal theater, the artillery armory and the various school houses.

The city sets aside annually, in addition to the amount which would have been paid out in premiums, \$5,000. The total insurance fund now amounts to \$55,000. The city is also undertaking the accident insurance in connection with the municipal tramways. Halle is not a large city, its population being less than 200,000. It is the seat of the famous old University of Halle, which for many years was the Mecca of American students of political science, and is one of Germany's most progressive cities.



From the preliminary announcement of a new monthly soon to be published in Durban, South Africa. The title is of special interest as indicating the international influence of THE AMERICAN CITY.



Excelsior "Rust-Proof" Tree Guards

THIS picture shows our new Excelsior "Rust-Proof" Cage Tree Guard. It is formed of strong wire, reinforced every six inches by a flat steel rod which is completely woven into the fabric. The complete Tree Guard is then dipped into melted zinc and rendered "Rust-Proof."

The Cage Tree Guards are high, strong and inexpensive. They cannot be dragged down or pounded out of shape. They are used in large quantities by public parks, along streets and on private estates.

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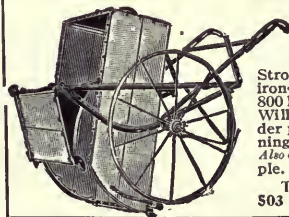
SAFETY IS THE FIRST REQUISITE IN THE ISSUE OF Municipal Bonds

The certification of bonds by a trust company or individual is worse than valueless unless it is accompanied by safeguards against over-issue and fraud. Certification by the Columbia-Knickerbocker Trust Company means that the bonds are prepared under the most rigid protective system ever devised and that there is no possibility of accident or fraud. That is why our certified bonds are worth more.

**Park Terrell, Manager,
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Saves Time and Labor

The Witten goes anywhere—handles any material. You load—it dumps automatically. Can't get out of order. Has many farm uses. Does work of extra man



Witten Automatic Dump Cart

Strong, malleable iron frame—iron-bound wood box. Capacity 800 lbs. 3-ft. wheels, 2-in. rims. Will not cut sod. End gate under perfect control. Light running. Costs little. You need one. Also our horse carts on same principle. Write for free folder NOW!

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Hill's Specimen Evergreens



The "climax" of your whole planting is the Specimen Evergreens you select. Experienced people know that Hill's Specimen Evergreens are ideal specimens, because each is vigorous and shapely, with a mass of fibrous roots ready to take hold the hour it is placed in your grounds.

Come and see them; or write for particulars.

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Conventions and Exhibitions

A National Organization for the Development of American Ports

A new organization, to be known as the National Association of Port Authorities, was formed at a meeting held in New York on December 9 and 10. Invitations to the conference had been extended by Calvin Tomkins, Commissioner of Docks and Ferries of New York, the delegates including representatives of municipalities and of civic bodies interested in port development from various cities on the Atlantic and Pacific coasts, the Gulf of Mexico and the Great Lakes.

Especial emphasis was placed by several speakers at the conference on the importance of port development as a factor in cheap transportation and as the most efficient corrective of railroad abuses. To enable any port to perform its proper functions in the public interest, it was shown that its docks and terminal railroad should be publicly owned and operated, and so planned, equipped and managed as to afford the greatest possible facility and economy in the handling of freight.

In cities where the water front is now under private control, it was pointed out that instances might be found where private ownership had never legally been obtained, and that in any event the taxation of such private docks at full value, accompanied by the competition of well-managed municipal docks in other parts of the same port, would enable the city to break down private monopoly. In speaking of public ownership, Commissioner Tomkins said:

"Competition between the great ports necessitates the elimination of private profit at the waterfront, and to accomplish this public control is being substituted for private control and ownership. This process is a drastic one for private owners who are confronted with public competition of a serious character; and it is natural that opposition to modernizing methods should here be encountered. Coincident with the breaking up of private waterfront monopoly, private owners are importuning the public to expropriate their properties, and as speculative values fade with the monopoly on which they were based, private terminal companies are eager to obtain control over the new monopoly which has arisen in the development of marginal terminal railroads.

"It is of vital importance to all seaports that these terminal roads should be built with public funds and operated either directly by the public—as they are simply and successfully operated at many ports—or otherwise their agency operation should be maintained at all times under complete public control, so that all carriers and all shippers may have equal opportunities for service.

"The dock system, of the more important sections of the port, and ultimately of the port as a whole, should be tied together by marginal terminal roads, and the circulation of traffic over such roads behind the docks should be as public and unobstructed as is the marine circulation of traffic in front of them. This statement embodies the essence of port organization at New York and elsewhere.

"Now that the speculative value of waterfront lands is being destroyed by municipalization of adjacent dockage, the taxation of such lands should be reduced. Generally speaking, it is excessive. The city should promptly recognize the change which is taking place and assess the waterfront on the basis of its real value, computed on its *earning* power, which is smaller than heretofore, recouping its treasury from the correspondingly greater increase in the value of the back lands now more available for industrial and commercial purposes, as a consequence of the better waterfront terminal organization made possible by the marginal railroad under public control. In short, the taxable value of the back lands will increase immensely with the breaking down of the old-time private monopoly at the waterfront and the substitution of the best modern facilities, which, in themselves, will be comparatively unproductive and should be taxed accordingly.

"Dock acquisition and construction are very expensive, but the construction of a marginal railroad is not, comparatively speaking, expensive, and will afford the opportunity for the private exploitation of dock properties all along its line on the one side of it and for warehouses and industrial construction on the other side. Long stretches of unimproved waterfront now useless because remote from terminal facilities will thus be brought into use.

"Continuity of plan and policy must also be substituted for the fugitive sporadic attempts of recurring political administration."

The following officers and directors were elected:

President, Calvin Tomkins; Vice-Presidents, Colonel G. W. Goethals, Isthmian Canal Commission; J. J. Dwyer, San Francisco, president of the California State Harbor Board; George W. Norris, director of wharves, docks and ferries, Philadelphia; H. Pillans, Mobile, Ala.;

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for the ideal street sign is included in the Indestructible Sign which we manufacture. Made of solid steel. No enamel or paint to wear away. No rust to make it unsightly. A sign that will be readable and attractive for a hundred years to come. Signs made to read vertical as well as horizontal in any size from 2 x 2 to 12 x 48 inches. Prices low and liberal discount for quantity orders. Let us send you a sample sign. It will prove the absolute supremacy of our proposition for your purpose. Illustrated printed matter mailed on request.

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Forty different style sprayers to select from, for Tree, Garden and Shrubbery Spraying, White-washing, Disinfecting, etc. Hand and Compressed Air Sprayers, Bucket and Barrel Spray Pumps, also Dust Sprayers and Spray Nozzles.

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MANUFACTURERS "Yankee"
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Plant for Immediate Effect

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Start with the largest stock that can be secured! It takes over twenty years to grow many of the Trees and Shrubs such as we offer.

We do the long waiting—thus enabling you to secure Trees and Shrubs that give an immediate effect. **Fall Price List Now Ready.**

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Henry W. Lee, Chicago; Secretary, Alexander R. Smith, president of the Merchants' and Manufacturers' Board of Trade, New York; Treasurer, Harry C. Gahn, Cleveland; Directors (together with the officers), Colonel William M. Black, U. S. A.; General Hugh Bancroft, Boston; C. M. Gordon, Los Angeles; Mayor W. R. Mayo, Norfolk; William Kerneghan, New Orleans; Oscar F. Lackey, Baltimore.



The Second National Conference on Housing in America

The convention of the National Housing Association held in Philadelphia, December 4-6, brought together a large and earnest gathering of social workers, city planners, health officers and others interested in housing reform. Elsewhere in this issue are published abstracts of seven of the principal papers. The other main addresses were the President's annual report, by Robert W. de Forest, of New York; "Financing the Small House," by Lee K. Frankel, of

New York; "Garden Cities," by Grosvenor Atterbury, of New York; "Instructive Sanitary Inspection," by Mrs. Johanna von Wagner, of the Housing Commission of Los Angeles, Cal.

The program was a notable one, not only for the formal addresses, but also for the number and standing of the men and women who opened the discussions which followed the reading of each paper. Two instructive automobile tours of Philadelphia were taken by the delegates, on one of which bad housing conditions were inspected, while the other visited several of the more desirable residential sections of the city for families of moderate means.

The conference ended with a banquet, at which George W. Norris, of Philadelphia, presided, the speakers being Mayor Rudolph Blankenburg, Rev. Newell Dwight Hillis and Ambassador James Bryce.



A GROUP OF DELEGATES TO THE NATIONAL HOUSING CONFERENCE IN PHILADELPHIA

This picture was taken in the interior playground of a group of old houses on Mifflin Place, managed by the Octavia Hill Association. This association is a 4 per cent philanthropic stock company. Its aim is to improve insanitary areas by buying and reconstructing old dwellings. It also acts as agent for properties whose owners will put them in a sanitary condition, for which service it charges $7\frac{1}{2}$ per cent on rents collected. By the aid of women rent collectors who are also instructive sanitary inspectors, it maintains a high standard of cleanliness in all its buildings.



One of 10 Sprayers Sold to the City of Boston
Spraying Street Trees.

POWER SPRAYING

That it costs less to spray forest, park or shade trees with our HIGH DUTY apparatus than with any other sprayer and that our HIGH DUTY sprayers are superior to all others, is evidenced by the fact that we manufacture and sell over 90% of the HIGH DUTY Power Sprayers used in the United States.

Among those using our HIGH DUTY power sprayers are United States Department of Agriculture; United States War Department; United States Capitol Grounds; District of Columbia; Massachusetts State Forester; Massachusetts Metropolitan Parks; Massachusetts Metropolitan Water and Sewerage Board; City of Boston Parks and Public Grounds Departments; Albany, N. Y., Park Department; Providence, R. I., Forestry Department and over one hundred others.

Catalog on Request.

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Group of Power Sprayers Owned by "North Shore Summer Residents Committee", 12 of which, including the Auto Truck Sprayer, were Manufactured by Us.

American Road Builders' Association

An exceptionally successful gathering was the ninth annual convention of the American Road Builders' Association, held in Cincinnati, December 3-6. The total attendance aggregated about 1,300, and the program was carried out with an excellent list of papers and discussions, substantially as announced in THE AMERICAN CITY for November last. Abstracts of two of these papers will be found in the department of "Roads and Pavements" of the present issue.

In connection with the convention there was held the Fourth Annual Exhibition of Road Making Machinery, Materials and Appliances. In addition to 66 commercial exhibits, there were also included a most instructive exhibit by the U. S. Office of Public Roads and exhibits by various states, municipalities and educational institutions, numbering 20 in all.

At the business meeting a nominating committee was appointed consisting of John R. Rablin, Chief Engineer Metropolitan Park Commission, Boston; Jos. W. Hunter, Deputy State Highway Commissioner of Pennsylvania; Henry G. Shirley, Chief Engineer Maryland State Roads Commission; Robert C. Terrell, Commissioner of Public Roads of Kentucky, and George W. Cooley, State Engineer of Minnesota. The committee will submit nominations for officers to be voted on at the annual meeting of the American Road Builders' Association, February 7.

+ +

Officers and Directors of the American Institute of Architects

The annual election of the American Institute of Architects held in connection with the convention in Washington last month, resulted in the reelection of the following officers:

President—Walter Cook, New York City.

First Vice-President—R. Clipston Sturgis, Boston.

Second Vice-President—Frank C. Baldwin, Fredericksburg, Pa.

Secretary and Treasurer—Glenn Brown, Washington.

Three new directors and an auditor were elected, as follows:

Directors—Burt L. Fenner, New York; C. Grant LaFarge, New York, and H. Van Buren Magonigle, New York.

Auditor—Robert Stead.

Mississippi League of Municipalities

At the annual convention of the Mississippi League of Municipalities, held in Vicksburg, December 9, the following officers were elected for the ensuing year:

President—W. G. Benbrooke, Mayor, Natchez.

Vice-President—O. M. Quin, Mayor, McComb.

Secretary-Treasurer—A. M. Paxton, City Clerk, Vicksburg.

+ +

Conference of Ohio Cities, January 22-23

The Executive Board of the Ohio Municipal League, of which Mayor Newton D. Baker, of Cleveland, is President, and Mayo Fesler Secretary, has issued a call for the first annual meeting of the League in Columbus on January 22 and 23.

The mayors of 82 cities and 259 incorporated villages in the state will be requested to appoint delegates to this meeting, the number from each city to be based upon the population. An address of welcome will be made by Mayor Karb of Columbus. The chief feature of the program will be the consideration of proposed legislation affecting cities and villages under the home rule amendment. Three suggested forms of municipal charters will be presented to the delegates. Among the speakers will be Governor Cox, Mayor Hunt of Cincinnati, and Mayor Whitlock of Toledo.

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SOME COMING EVENTS**JANUARY 9.—NEW YORK CITY.**

American Society of Engineering Contractors. Secretary, J. R. Wemlinger, 11 Broadway, New York City.

JANUARY 11-25.—NEW YORK CITY.

Thirteenth National Automobile Show. Madison Square Garden and Grand Central Palace. Manager, H. W. Perry, 7 East 42d Street, New York City.

JANUARY 14.—TRENTON, N. J.

Mayors' Society of New Jersey. Annual Meeting. President, Frederick W. Donnelly, Mayor, Trenton, N. J.

JANUARY 22-23.—COLUMBUS, OHIO.

Ohio Municipal League. Annual Meeting. Secretary, Mayo Fesler, 825 Engineers' Building, Cleveland, Ohio.

JANUARY 28-30.—MONTREAL, QUEBEC.

Canadian Society of Civil Engineers. Annual Meeting. Secretary, C. H. McLeod, 413 Dorchester Street, West, Montreal, Quebec.

The largest stock of specimen trees in the country.

Norway Maples, Sugar Maples, Silver Maples, Pin Oaks, Scarlet Oaks, Red Oaks, Planes, Elms, Beeches, Lindens, Austrian Pines, Hemlocks, Norway Spruce, Retinosporas

AMAWALK NURSERY
AMAWALK
Westchester County, NEW YORK

The Use of Motor Trucks Increasing Phenomenally

The rapidity with which gasoline and electric delivery wagons and trucks are coming into use throughout the United States is not generally appreciated. In Massachusetts the registrations increased from 2,189 on September 1, 1911, to 3,560 on the same date in 1912—an increase of 1,371, or 62½ per cent. In Washington, D. C., there are now 500 motor trucks and wagons where a year ago there were 218, and in Los Angeles, Cal., where there were 70 a year ago, there were nearly 1,300 on November 1, 1912, an increase of more than 1,700 per cent. There has been a 120 per cent increase in Chicago in the last year, with 2,094 trucks registered in September, as compared with 800 registered in May, 1911. There are estimated to be 50,000 in use in

America at the present time, and if the recent percentage of increase is maintained the number will be nearly doubled during the year 1913. There are indications on every hand that municipal officials and business men are at last convinced of the reliability, superior efficiency and economy of the motor wagon in its many forms and are now converting their horses and wagons into motor equipment as fast as conditions permit.

New models of the best makes of trucks will be brought together for easy inspection and comparison at the Chicago Automobile Show, the second week of which, from February 10 to 15, is reserved for the exhibition of commercial cars and accessories exclusively. Reservations have already been made for 103 exhibits of passenger cars, 63 of commercial cars, and about 250 of accessories.

Items of Civic and Municipal Progress

New York's New Municipal Building

The photograph reproduced on the front cover of this issue was taken on December 23, 1912, and shows the present appearance of New York's new Municipal Building, now nearing completion.

The structure, which is to house nearly all of the city departments, is a remarkable one in many ways. It is the largest municipal building ever undertaken by any city.

Built in the near vicinity of the present City Hall and the Brooklyn Bridge, the center of the new building is directly over Chambers Street, which passes underneath the large central arch. The main building is 25 stories, the tower extending to a height of 41 stories. It will have, when completed, 1,261,532 square feet of floor area—or approximately 29 acres of floor space.

The structure contains some 700,000 cubic feet of granite—said to be the largest stone contract ever let. It required 25,350 tons of structural steel—more than in the superstructure of any other building in the world. The total cost, inclusive of foundations, will reach almost \$12,000,000.

McKim, Mead & White are the architects, and the Thompson-Starrett Company general contractors.

Duluth Adopts Commission Government; Los Angeles Defeats it

By a vote of 5,524 to 3,386, Duluth, Minn., adopted the commission form of government at a special election held December 3. Under the new charter there are to be five commissioners, each receiving \$4,000 a year. The departments to which the commission will be assigned at their first meeting, April 14, are: Public affairs, finance, public works, public safety and public utilities. The charter also provides for the election by the people of a special municipal judge and an assistant municipal judge. There will be no primary election, the single election being on the preferential plan.

On the same day that Duluth adopted its new charter the voters of Los Angeles, Cal., refused to endorse a commission form for that city. The vote stood 15,844 for to 33,510 against. The result was a source of surprise and disappointment to the friends of charter reform, for it is probable that no proposed charter for an American city was ever drafted more carefully. In addition to the thorough and painstaking work of the local committee it will be remembered that the National Municipal League held its annual meeting in Los Angeles last



**If
You Plant
Meehan Stock**

You will be sure of getting the best possible results from the trees and shrubs which adorn your Streets, Parks and Grounds. Send for Catalogue to

THOMAS MEEHAN & SONS

Wholesale Nurserymen

DRESHER, PA.

Near Philadelphia

**WIZARD BRAND
SHEEP MANURE
DRIED AND PULVERIZED**

unequaled for Park and Cemetery use. Best natural fertilizer for Lawns and Gardens. Trees, shrubs and vines.

No Weeds
No Waste

Economical and
Convenient



Write for Booklet and Prices with Freight Rates.

THE PULVERIZED MANURE CO.
42 Union Stock Yards, Chicago

Imp. Soap Spray

Will rid your trees and shrubs of pests.

Efficient without mineral poisons.

Colorless and harmless except to the pests.

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Eastern Chemical Co., Boston

*Everyone interested in saving trees
should send for our circular about*

Elastic Pruning Paint

Saves Girdled Trees, Heals Cuts and Wounds,
Prevents Decay, Stops Bleeding in Pruning,
Cures Fungus Growth.

**A Positive and Effectual Remedy for the Treatment of Fruit and Shade Trees when Damaged
Use Any Time of the Year**

FRUIT GROWERS' SUPPLY DEPOT

E. G. MENDENHALL

Box D. - - KINMUNDY, ILL.

**BEFORE MAKING UP YOUR SEED ORDER
FOR NEXT SEASON BE SURE TO
KNOW ABOUT**

KALAKA

Fertilized Grass Seed

It has special merit and quality that will recommend it to Park and Cemetery lawn makers.

Ask for valuable booklet and quantity prices.

THE KALAKA COMPANY

1122 West 35th Street

CHICAGO

July, and that several of its experts gave special consideration to the charter then being drafted. The most important changes from the present charter proposed by the new instrument were the reduction in the number of elective officers to eight—a mayor, six commissioners and a controller, all with adequate salaries—and the broadening and strengthening of the civil service. Among other things the rejected charter provided also for the initiative, referendum and recall; power to the city to embark in a long list of enterprises, and the removal of the old restriction under which the city could not make appointments from outside its borders.



A Prize for Essays on "The Best Sources of City Revenue"

Heretofore the National Municipal League has established an annual prize of \$100, called the William H. Baldwin Prize, to be given to the author of the best essay on a subject connected with municipal government. For the year 1912-1913, two parallel prizes of \$50 each will be offered to undergraduate students in colleges and universities.

The Council of the League has selected as the topic for next year's competition the subject of "The Best Sources of City Revenue."

The essays must not exceed 10,000 words, and must be submitted not later than March 15, 1913.

Further particulars may be obtained of Clinton Rogers Woodruff, Secretary of the National Municipal League, North American Building, Philadelphia.



The Minimum Wage Principle Adopted by a Public Service Corporation

A minimum wage of \$9 a week for its women employees has been adopted by the Public Service Corporation of New Jersey, to take effect January 1. The company controls the street railway, electric light and gas service in Newark, Jersey City and several other cities and towns in New Jersey. Some 300 women are employed by the corporation and its subsidiary companies, a large number of whom will be favorably affected by the new rule.



Playground Devices at Schools

The *Municipal Record*, the official publication of the city of Chattanooga, Tenn.,

has this to say in its issue of December 15 regarding playground apparatus in public school grounds:

"Playground apparatus of some kind, rather limited in quantity it is true, but a good starter, has been installed on the grounds of every public school in Chattanooga with the exception of three. Hence is seen the progress under municipal auspices of the idea which originated in the school improvement leagues and was given its first practical application here. This apparatus includes slides, flying rings, horizontal ladders, giant strides, seesaws, etc.

"Needless to say, the children take to these devices like ducks to water. There can be little doubt that the physical standard of these children will be raised by access to approved devices which amuse and at the same time develop muscles. It is extremely rare for a child to be hurt while using these devices, and it may be said safely that an accident never occurs where they are properly used. A child recently broke his arm while using, or rather mis-using a slide, for investigation showed that the boy slid head first. All apparatus secured by the city is of modern approved type, thoroughly safeguarded, so that when properly used it is as nearly impossible for injury to result as human ingenuity can attain."



Making Skating Rinks Out of Vacant Lots

The enthusiasm over the excellent skating provided by flooding playgrounds and vacant lots in winter shows that it is worth while finding out just how various communities have gone to work to utilize open spaces in this way. In the December issue of *The Playground* Abbie Condit gives some practical suggestions taken from experience in this matter.

The lot selected should be near a hydrant. First, when there is an inch of frost in the ground, clear and level the surface, filling up small holes and footprints. Banks of snow or earth may be made around the sides of the rink, or, if a permanent rink is desired, the banks may be made of boards or cement blocks, set flush with the ground, banked with sand on both sides, and wet so that the boards or cement will freeze into the ground.

The watering should be done with a rather large hose, at night or very early in the morning. The nozzle should distribute the water well in large drops. Begin at one end of the ground, and if the weather is cold, by the time the other end of the ground is reached the first part will be frozen. By proceeding backward and forward a layer of ice is gradually built up, but there must be no water underneath the ice to soak into



TREE TANGLEFOOT

A HARMLESS, sticky substance applied directly to tree trunks. Remains effective rain or shine three months and longer, fully exposed to weather. One pound makes about 9 lineal feet of band. No apparatus required, easily applied with wooden paddle. Especially recommended against gypsy, brown-tail and tussock moth caterpillars, canker worms, climbing cut worms and bag worms, although equally effective against any climbing insect. TREE TANGLEFOOT needs no mixing, but is always ready for use. Do not wait until you see the insects, but band trees early and get best results.

WRITE US FOR BOOKLETS AND PRICES

The O. & W. THUM COMPANY, Grand Rapids, Michigan
Manufacturers of Tanglefoot Fly Paper and Tree Tanglefoot.

MIXERS

For Plaster,
Cement and All
Dry Materials and
for Mixing Con-
crete for Building
Blocks. ♣ ♣ ♣

W. D. DUNNING

Water Street, Syracuse, N.Y.

Barren Land ^{WILL}NOT Produce Crops

So the logical way to be permanently rid of weeds is to make the land barren.

"HERBICIDE"

The Weed Exterminator

Not only kills Grass and Weeds of every kind, but makes the land barren by destroying those elements which are essential to plant life.

For destroying Grass and Weeds of every kind on roadways and in gutters, the use of "HERBICIDE" is the most practical and economical method, as one thorough application does the work.

Think what a saving in cost of labor alone this means when compared to the old method of sending laborers over the ground every few weeks to clear the roads and gutters of grass and weeds by the pick and shovel method.

One Barrel (50 gals.) of "HERBICIDE" makes 2000 gallons of strong and effective treating liquid when mixed with water.

Application is made by means of sprinkling apparatus of any kind.

Used and endorsed by hundreds of Cities, Parks and Cemeteries.

Write for quotation and further information.

THE READE MFG. CO.

1021 Grand Street

Hoboken, N. J.

the ground and cause air cavities over which the ice would break. It usually takes about three hours to sprinkle a half acre. The sprinkling must be done every night.

If the flooding process is used, the water should be turned on a little at a time and allowed to freeze solid before more is added. In this way a thickness of from four to six inches may be built up. The renewing of the ice should be done by sprinkling, first removing the ground-up ice.

"It is estimated in Milwaukee that if the ground is prepared for flooding before it is frozen, two men can prepare an acre in a level vacant lot in one day. Once the lot is covered with ice, the rescraping and reflooding might take one man three half days a week. This would not allow for extra time for clearing the snow. It is estimated in Milwaukee that \$107 is the minimum cost for preparing and keeping one acre in order."

It cost \$450 to conduct seven rinks all last winter in Holyoke, Mass., and there was an average attendance of 2,000 a day.



90-Cent Gas for the Passaic District in New Jersey

New Jersey's State Board of Public Utility Commissioners, by a decision made public on December 27, has decreed a 90-cent gas rate for the section known as the Passaic district. This is one of several districts to which gas is supplied by the Public Service Corporation at a present rate of \$1 per thousand cubic feet.

The municipalities immediately included in the order of the Board are Passaic, Paterson, Hawthorne, Saddle River, Prospect Park, Haledon, Garfield, Lodi, Nutley, Little Falls, Ridgewood, Glen Rock, Wallington, Totowa and Acquackanonk Township. A similar reduction for all districts covered by the Public Service Corporation where a dollar rate now prevails is recommended by the Board, though not made obligatory at present.



New York's First Outdoor Christmas Tree
On Christmas Eve, in Madison Square Park, surrounded by some of the city's biggest buildings, New York's first outdoor Christmas tree was illuminated with appro-

priate ceremonies. During the preceding 24 hours the first heavy snow fall of the winter had decorated the branches and concealed the concrete base in a manner which added much to the picturesqueness of the scene. When the current was turned on, the big star, sixty feet aloft at the tree's topmost point, began to glow, and then there gleamed from the snow-covered branches cluster after cluster of colored lights. From a band of trumpeters, and from a big chorus in the bandstand there came the notes of Christmas music. The program lasted until midnight, ending with the strains of "My Country, 'tis of Thee."

While the city allowed the use of the park for the purpose, the enterprise was not a municipal one, the funds and program being arranged by a committee of citizens.



NEW YORK'S OUTDOOR CHRISTMAS TREE

Night view, showing the illuminated, snow-covered branches



Seven Million Watch-Towers in the Bell System

The original campanili were the watch-towers of old Venice, guarding the little republic from invasion by hostile fleets.

Later, bells were mounted in these same towers to give warning of attack and celebrate victories.

Judged by modern telephone standards, such a system of communication seems crude and inadequate.

In the civilization of to-day, a more perfect intercommunication is

essential to national safety, convenience and progress.

The Bell System binds together a nation of nearly one hundred million people, by "highways of speech" extending into every nook and corner of this great country.

Seven million Bell telephone stations are the watch-towers which exchange, daily, twenty-five million messages for the happiness, prosperity and progress of all the people.

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES**

One Policy

One System

Universal Service

NEWS *from the* MANUFACTURERS

METHODS
MATERIALS &
APPLIANCES

An Economical Method of Placing Wires Underground

Many of the smaller cities and towns which would gladly abolish overhead wires have been seriously hampered in their efforts to follow the example of larger municipalities because of the considerable cost of conduits for underground systems. With the advent of steel-taped cable the way has been cleared for further progress along this line. Briefly, the steel-taped cable provides an adequate substitute for the underground conduit system at a much lower cost. Its purpose is not to displace underground conductors in ducts where a permanent, flexible system and provision for suitable future growth are necessary, but rather to fill a particular need for which the conduit system is neither adapted nor required. This field includes the smaller cities, suburban districts, parks, private estates and manufacturing plants where local conditions do not justify the expense of a conduit system and where flexibility is unnecessary.



DECORATIVE STREET LIGHTING AT LANSING,
MICH.

Wires laid underground in steel-taped cable

Western cities are considerable in advance in the installation of such underground systems. Lansing, Mich.; St. Charles, Ill.; Wausau, Wis.; Austin, Tex., and Warren, Ohio, are among those which have used steel-taped cable in their ornamental street lighting systems. Kendallville, Ind., and Henderson, Ky., have employed it in connection with the decorative lighting of their public parks. These cities have used a regular lead-covered cable served with jute and tar, over which are two winds of steel tape in reverse directions with still an over-all serving of jute and tar, as manufactured by The Simplex Electrical Company, of Boston, Mass.

The experience of these cities has shown a material saving in initial cost, due not only to the cost of the cable itself but to the difference in the time and labor of constructing a conduit system and drawing in the regular lead-covered cable in the ducts as compared with the installation of the steel-taped cable. While plans and expert superintendence are essential in the construction of a conduit system, the steel-taped cable is laid in a narrow, shallow trench and the earth replaced. The service record of this ready-made cable-conduit system has been so satisfactory as to give promise of its complete success in the work for which it has been adopted.

✦ ✦

The Disposal of Municipal Waste by Incineration

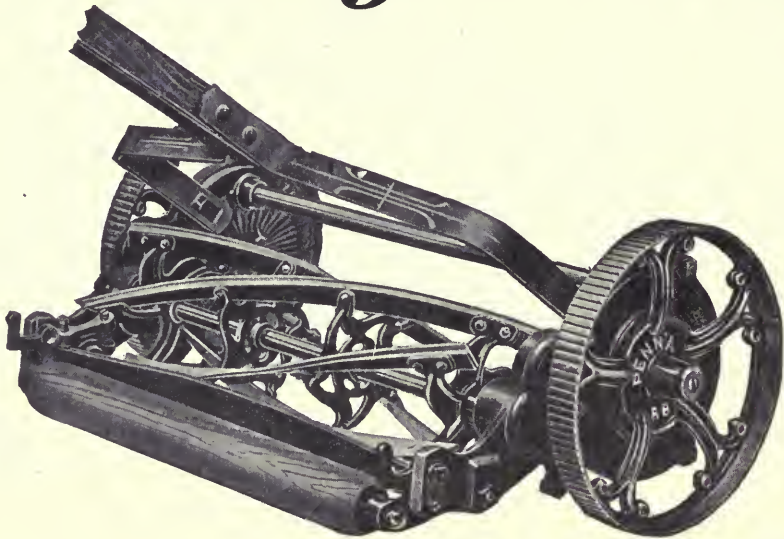
"The Sterling Destructor" is the title of a handsomely illustrated catalogue recently published by the Griscom-Russell Company, of New York, sole American representatives of Hughes & Stirling, destructor specialists of Great Britain. This catalogue is of particular interest and timeliness, because of the rapidly increasing adoption in every quarter of the world of English systems of destroying combustible refuse by high temperature destructors. The volume describes in some detail the destructor as used for the disposal of municipal and industrial wastes. Several typical installations are illustrated and the results of official tests given. There is also a list of users of the Sterling apparatus, and a partial list of contracts now in hand from municipalities and institutions in various parts of the world.



*“State the State for
Quality’s Sake”*



Pennsylvania



*Exclusive Pennsylvania Features, that Distinguish Pennsylvania
Quality Mowers from Others*

Blades—All blades, revolving and stationary, are crucible tool steel, oil hardened and tempered. Crucible steel costs more to buy and costs more to grind than the regulation “lawn mower” steel.

Castings are made in our own foundry, of selected pig iron, hence we secure uniform quality.

Handles and wood rollers are cut from our own forest, and we therefore can guarantee seasoned lumber.

Labor—The best mechanics only can make! *Pennsylvania Quality.*

Our booklet, “The Lawn, Its Making and Care,” with full description of *Pennsylvania* Mowers, free for the asking.

Supplee Hardware Company

Philadelphia, Pennsylvania

Progress in Water Main Cleaning

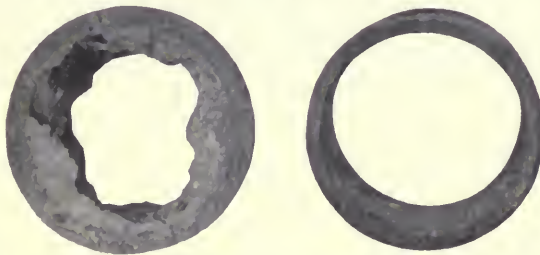
In October last the city of Trenton, N. J., placed a contract with the National Water Main Cleaning Company, of New York, for the cleaning of about half a mile of water mains. So satisfactory were the results that the contract has been extended to 4 miles, and the work is still progressing. Similar conditions have obtained in Hannibal, Mo., where the Hannibal Water Company placed a contract originally for the cleaning of $2\frac{1}{2}$ miles of various sizes of mains, which, with the resumption of work in the spring, will be extended to 4 miles.

The methods employed by the National Water Main Cleaning Company, which have proved so successful in these and many previous instances, may be briefly described as follows:

The contractors first dig down to the main to be cleaned in two places, the distance between these holes varying according to the size of the main, the pressure maintained, the nature of the incrustation, and the conditions of the supply. Where there is sufficient water pressure, and the condition of the interior of

to inaccurate determination of the mean daily gage heights, ordinarily reduced from a few observations taken during the day, usually one in the morning and one in the evening. On many streams there is considerable daily fluctuation due to natural or artificial control, making it impossible to obtain accurate gage heights without the use of an automatic register which will record the height of water during the entire day, or over a longer period of time.

Two types of water stage registers are offered by W. & L. E. Gurley, of Troy, N. Y., to meet these requirements. The first is known as the Automatic Self-Winding, designed to give records of the rise and fall of water continuously for a long period of time, and especially suited for stations where it is impracticable for the observer to visit the station for long intervals of time and where the record to be of service should be continuous. The second pattern of register is called the Simplex, for use in stations where the observer can visit the station at least every second day, and where the variation in the height of water during the period does not ordinarily exceed



A WATER MAIN BEFORE AND AFTER CLEANING

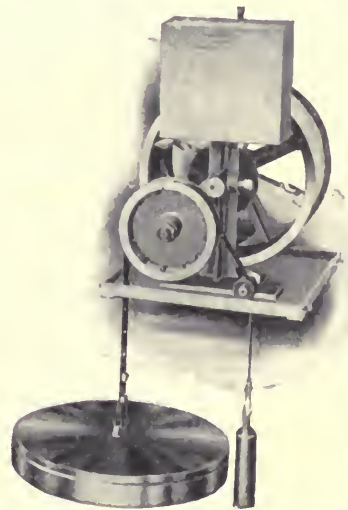
the main warrants it, a patented self-propelled machine is used; but in other cases, after the cuts are made in the main, a cable is passed through the main by means of a patented carrier. After passing this cable through the main the machine is pulled into the pipe, the pipe is made up at that point, and the machine is pulled through by means of a windlass, at the same time washing the main of all sediment and cleanings, these being carried to the surface of the street through a riser pipe. After the machine has been pulled through the main the water is shut down, the riser pipe taken out, and the main reconnected.

✦ ✦

For Determining the Volume of Water in Streams Available for Use

The increasing use of water from streams for power, irrigation, and other purposes has made very important the accurate determination of the volume of water available for such uses. The discharge of a stream is usually ascertained by a comparison of mean daily gage heights, with a rating table of the discharge of the stream at varying heights compiled from a series of current meter observations.

The greatest error in these estimates is due



THE SIMPLEX WATER STAGE REGISTER

8 feet. The mechanism of this register is shown in the accompanying illustration.

A circular descriptive of both types of these registers may be obtained of the manufacturers on application.

✦ ✦

The International Steam Pump Company's New President

On November 19, 1912, Mr. William Brown Dickson, formerly a Vice-President of the United States Steel Corporation, was elected President of the International Steam Pump Company, of New York. Mr. Dickson succeeds the late Benjamin Guggenheim, who went down on the Titanic.



Coldwell Lawn Mowers

Near the first hole, Pelham Bay Park links, N. Y.

Two Mowers in One

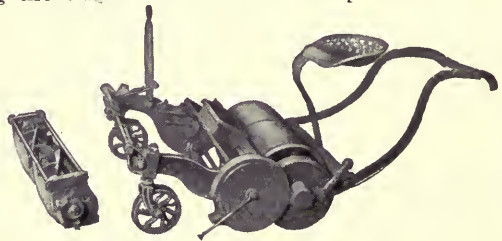
You get practically two horse mowers in one with Coldwell's Demountable Cutters.

These cutters are removable at will, like the blade of a safety razor, and two or more go with each machine.

If one cutter needs sharpening or repair, it takes less than a minute to remove it from the frame and attach another.

No waste of time sending the whole mower to the shop. No heavy freight charges.

Coldwell's Horse Mowers and Coldwell's new Putting Green Mowers are now made with this money-saving, time-saving, labor-saving device—Coldwell's Demountable Cutter (patented).



Demountable Horse Mower

Send for leaflet giving full description and prices. Complete catalogue—150 different styles and sizes—on request.

COLDWELL LAWN MOWER COMPANY
 Philadelphia NEWBURGH, NEW YORK Chicago

The "Nobolt-Cover" for Service Boxes

A device which eliminates, in a simple and ingenious manner, the need for brass bolts in service box covers is the "Nobolt-Cover," here illustrated. This new cover fits any standard service box, and is automatically adjusted by a simple twist of the wrist. A tap of the hammer locks it, no wrench being required.



The "No-Bolt" Cover

The "Nobolt-Cover" was designed to meet the common complaint of water and gas companies that the covers now in use are easily broken and that the bolts rust in the lugs or are often broken off, or stolen by brass thieves. As is well known, a broken cover allows the box to fill rapidly with

dirt and stones, preventing shut-offs and necessitating the digging up and replacing of the box.

An illustrated circular and price list may be secured of the Patterson Manufacturing Company, of Pittsburgh, Pa.

✦ ✦

A Producer Gas Engine for Easton

The Lehigh Water Company, Easton, Pa., has purchased a Bruce-Macbeth 300-horsepower producer gas engine for operating a 3,000,000-gallon city service pump. This engine is to replace a steam plant, and it is estimated that the saving will be about \$500 a month.

✦ ✦

Something Unusual in a Paving Catalogue

An exceptionally attractive piece of literature on the paving problem is the new catalogue of the Hassam Paving Company, of Worcester, Mass. In this brochure are illustrated and described the Hassam compressed concrete, compressed concrete with bituminous surface and granite block pavements. Printed throughout in two colors on fine paper, with handsome illustrations and a modern face of type, the catalogue is a delight to the eye. What is more important, it tells the story of the Hassam pavements in a readable, convincing manner, and shows streets and parkways on which these pavements have been laid from Portland, Me., to Portland Ore., and from Hillsboro, Tex., to Vancouver, B. C.

✦ ✦

The Amawalk Nursery Catalogue

An interesting collection of views in a nursery covering 249 acres and including 300,000 trees, is shown in the catalogue of the Amawalk Nursery, of Amawalk, N. Y. The large variety of trees obtainable from this nursery is indicated by the price list included in the catalogue, which covers leading varieties of the beech, catalpa, dogwood, elm, horse chestnut, linden, locust, magnolia, maple, oak, plane, sweet gum, tulip, willow, etc. Several varieties of evergreens, which have proved to be hardy in the vicinity of New York, are also

included, such as the arborvitae, larch, pine, spruce and fir. Instructions for tree planting are also included.

✦ ✦

"The Proper Construction of Brick Roads"

This is the title of a leaflet which is being distributed by the Reynoldsville Brick & Tile Company, of Reynoldsville, Pa. It comprises a paper on the subject by Will P. Blair, Secretary of the National Paving Brick Manufacturers' Association, with some added comments on the advantages of wire cut lug paving blocks, by Clyde C. Murray, Secretary of the Reynoldsville Company.

✦ ✦

Ornamental Lamp Standards

The new Catalogue "D," issued by the Electric Railway Equipment Company, of Cincinnati, illustrates a complete line of ornamental lamp standards and combination railway and lighting poles. It includes lighting fixtures arranged for Mazda lamps, and special columns and brackets for supporting ornamental luminous arc lamps, and pictures a large variety of designs clearly and attractively. Two of the illustrations give detail views of a lighting fixture and a special insulated pole top, showing how the wiring is done. Special attention is called to this company's wire-lock swedge joint and tubular poles, and it is stated to be impossible for poles made up in this manner to telescope at the joints either by overloading or by the drop test, and that the pole cannot rust or corrode at the joint.

✦ ✦

"How to Plant a Tree"

This is the title of a practical pamphlet, published for free distribution by the William H. Moon Company, Nurserymen, of Morrisville, Pa. In addition to information on the planting of trees in general, the subjects discussed include the preparation of the soil; how to plant and trim evergreens, and the planting and trimming of shrubbery and hedges.

✦ ✦

Meters for Lorain, Ohio

The city of Lorain, Ohio, has just awarded a contract for furnishing 500 water meters to the Badger Meter Manufacturing Company, of Milwaukee, Wis.

FOR SALE

All right, title and interest in and to a patented steel-protected curb conduit, combining in a single unit means for ideal municipal sanitation in street cleaning, surface drainage and snow removal. Owner has other business interests.

Address M. C. J., care of
THE AMERICAN CITY.



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For reference use of public officials, park departments, street superintendents and all who buy trees, shrubs, flowers or seeds for the ornamentation of parks, streets and other public or private property

ANDORRA NURSERIES

WM. WARNER HARPER, Prop.

CHESTNUT HILL
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MOON'S

A NURSERY where the assortment of varieties is unequalled and the quality unexcelled

The Wm. H. Moon Co.
Morrisville, Pennsylvania

HOBBS' TREES and SHRUBS

For Public and Private Planting

CENTRALLY LOCATED

C. M. HOBBS & SONS
BRIDGEPORT, IND.

TO get the best results it is necessary to get the best Seeds. Every packet of Henderson's Seeds that is sold, has behind it the experience of 66 years of successful Seed Growing and Selling. The Initial Seed Cost is the smallest part of your expense. Henderson's are Tested Seeds.

"Catalogue Free on Application."

Peter Henderson & Co.
35-37 CORTLANDT ST. NEW YORK

VOLUME VIII

NUMBER 2

The American City

NEW YORK
FEBRUARY,
1913

Editorial Comment

What the States Pay Towards the District of Columbia's Municipal Expenses

Congressman Ben Johnson, of Kentucky, Chairman of the House Committee on the District of Columbia, has analyzed in tabular form the Federal subsidy towards the purely local and municipal expenses of the District of Columbia. The numerous items which constitute the District budget have been reduced to ten main heads, the total amount paid by the Federal Government for the last fiscal year being as follows:

| | |
|------------------------------------|-------------|
| Schools | \$1,598,355 |
| Streets, sewers, water mains. | 606,472 |
| Police | 510,144 |
| Improvements and repairs. . . | 1,154,592 |
| Salaries and health. | 415,346 |
| Interest, sinking fund. | 487,704 |
| Lighting | 232,497 |
| Fire Department | 333,735 |
| Charities, corrections. | 698,216 |
| Miscellaneous | 160,340 |

Total\$6,197,401

Distributing these amounts pro rata to population among the several states, the table shows at a glance just how much each state contributes to these various municipal expenses of the nation's Capital. It is interesting to note, for example, that Nevada, the smallest of the states in population, contributes \$1,423 annually towards the public school system of the District of Columbia, while New York's share for the same item is \$157,957. Ohio pays \$17,295 for fire protection in the District of Columbia; Pennsylvania contributes \$19,378 for lighting its streets; and Massachusetts helps to support the District police to the extent of \$18,671. It cost the citizens of Rhode Island \$4,114 for the year to administer charities and corrections in the District, while the streets, sewers and water mains are assessed

against the state of California to the amount of \$15,675.

Who Benefits by These Expenditures?

Is there not dubious wisdom in this continued payment by the states of one-half of the municipal expenses of the District of Columbia? Who really benefits, aside from the land owners in the District, by the annual contribution from the nation of more than six millions of dollars? Are rents, for example, proportionately lower in Washington than in other large cities?

Light was thrown on this latter question at the recent National Housing Conference by Gen. George M. Sternberg, President of the Washington Sanitary Improvement Company, operating on the basis of "philanthropy and five per cent." The company now owns several hundred buildings, its standard construction being brick two-family houses, built in solid rows. The rentals vary from \$8 to \$11 per month for three rooms and bath, and from \$10 to \$13 for four rooms and bath.

In Cincinnati a somewhat similar housing experiment, conducted by J. G. Schmidlapp, has demonstrated that apartments of three rooms and bath can be rented in that city for as low as \$7 a month, with a \$9 rate for four rooms and bath. In Philadelphia the standard type of *one-family* house, having six rooms and bath—and built without philanthropic restriction on dividends—rents for \$16 a month; and, on some of the minor streets, houses having four rooms, bath and summer kitchen, rent for as low as \$13. Cincinnati and Philadelphia pay all of their own municipal expenses without any subsidy from the Federal Government—and, what is more, they also help to pay the taxes of the owners of Washington real estate.

Washington Alleys a National Disgrace

Turning to the darker side of Washington's housing problem, how many cities can compete with the record, made by its alley slums, of a death rate within the first year of life of one child out of every three born? Do the American people generally realize that there are still in their capital city 275 blocks of these blind alley "homes," containing 3,337 dwellings and approximately 16,000 inhabitants? And do they know that, to make matters worse, these houses, with their diseases and crime, fill the center of many blocks rimmed with splendid houses and hotels?

Attention was called to these facts in a recent issue of *The Survey*, by Dr. Thomas Jesse Jones, of Washington. It is shown that:

"Objectionable and dangerous as these alleys have been since the Civil War, the history of the effort for legislative treatment of the condition is a story of forty years of struggle which has borne but comparatively little fruit. On almost every occasion the forces of selfishness have succeeded in overthrowing any appeal to Congress for a systematic treatment of all the blocks infected with these by-ways."

A Tradition without Foundation in Fact

If the Federal Government owned, and used for the benefit of the nation as a whole, one-half in value of the land in the District of Columbia, there might be justice in the payment by the United States of fifty per cent of the District of Columbia's municipal expenses. But the claim that such condition now exists rests on nothing more substantial than tradition. Says Congressman Johnson in a letter to THE AMERICAN CITY under date of January 8, 1913:

By act of Congress, dated February 21, 1871, the three municipal corporations of Washington, Georgetown and Levy Court were done away with, and the one municipal corporation of the District of Columbia was established, so that we now have no Georgetown and no Washington, beyond the fact that the postoffice authorities have designated the original city of Washington as Washington for postal purposes alone.

"The Federal Government, very early in the history of the District of Columbia, did, in a sense, own about half of the original city of Washington, but has never owned anything like that part of the entire District of Columbia. Those who sought to have it appear that the Federal Government owned one-half of the whole city of Washington were compelled to include all of the streets, squares, alleys and parks in order to make their position at all tenable. The Supreme Court of the United States has decided that the Federal Govern-

ment does not own the streets and alleys, but that it has sovereignty only in them.

"Without having accurate information before me it is my opinion that in the District of Columbia the Federal Government owns less than 25 acres used *exclusively* for Governmental purposes. The rest of the Government holdings in the District are for the benefit of the citizens of the District."

Unjust Taxation in the District

If the tribute paid by the nation were distributed equitably among the residents and land owners of the District of Columbia, the practice would be sufficiently bad; but the loot is divided in a manner notoriously unfair. In a report made in August last by a committee of seven Congressmen, and signed by every member of the committee, astonishing disclosures were made. Some of these, as abstracted in *The Public*, were:

"It appears that real estate in the District of Columbia is assessed at only \$330,000,000, while its true value is \$744,000,000, and, as usual everywhere in cases of under-assessment, the owner of vacant or poorly improved land gets the benefit. Land is assessed at \$169,674,006 (about one-third of its value), whereas improvements are assessed at \$160,648,481 (two-thirds of their value). In respect of individual holdings, the 40,000 small homes are assessed at an average of 90 per cent. of their value (site and house together), while the fine residences show an average of only 50 per cent. Considering ground values separately, the committee finds that sites occupied by small homes are assessed at 60 per cent. of value, those occupied by middle-class houses at 50 per cent., those occupied by fine residences at 30 per cent., those in the business area at 30 per cent., and large suburban speculative areas at 20 per cent. It may be seen, therefore, that of the share of District revenues which local real estate owners pay, small home owners pay double the taxes, value for value of their property, that the owners of fine residences do, and three times as much as land speculators pay."

Must the Capital Continue Disfranchised?

With the existence of such conditions under Federal administration, is there good reason for the nation continuing to disfranchise the citizens of the District of Columbia? If the municipality of Washington were to manage and maintain its own government under a Federal charter, would either its permanent or temporary residents suffer thereby? And would not the nation benefit by saving much of the time and money now consumed by Congress in administering affairs wholly local?

These are questions which we believe to deserve careful study by Congress and by the incoming administration.

PUBLIC MARKETS & MARKETING METHODS



J. F. CARTER

SECRETARY SAN ANTONIO
(TEXAS) CHAMBER OF
COMMERCE

Suggestions for Reducing the
High Cost of Living, Based on
an Inquiry into Marketing Con-
ditions in Seventy-one Cities—A
Symposium of the Data Thus
Secured

A STUDY of the marketing of farm products, other than cereals, wool and cotton, brings one to the conclusion that marketing produce in the United States is in a lamentably chaotic condition.

Many secretaries of commercial organizations who received letters from me several weeks ago, in which I asked for specific information about their own public markets, thought I was seeking information upon which to base arguments in favor of such a market in San Antonio. This was not the motive which prompted me, as we have in San Antonio a "market plaza," which has been in existence and in use for many years, with a market building that is about twenty years old.

My motives in gathering the information were two: to compile the information and deliver it back to all those to whom I had gone in search of information, and, more selfishly, to make a study of marketing produce.

(May I here introduce a parenthesis of sufficient length to say that it is my belief that all members of the American Association of Commercial Executives, when they gather information on any subject from secretaries in all parts of the country, should compile such data and make the compilation available to every other member? In this way we may be of distinct aid to each other, and each may build a file of data which will become valuable.)

My leading motive, however, was to make a thorough study of the market situation. What I learn is surprising, and illustrates to me the lack of system which

prevails in the selling and buying of food products.

In very few cases do we find the public markets receiving regular shipments of food products direct from communities other than their own. Then, how does the public market offer adequate service to its people?

In all cases we find the market master, the man who should be an executive head, a very much underpaid individual; in almost all cases, he is nothing but a janitor, or the slightly elevated boss of a janitor or force of janitors.

We find the first development of a market is the "curb" variety—a stated place where the producers gather with their wagons and offer their wares. In some instances, we find the produce bought by jobbers, in other cases by the retailers and, lastly, by the ultimate consumer.

The next development shows a building in which are stalls on two sides of a long aisle, where producers or commission men or retailers, or all, offer their goods to the consumer. And the next development is the allotment of curb space to farmers outside the market.

In the great majority of cases the markets are owned and regulated by the municipality, with here and there a market owned and operated by a private company.

It has been my attempt to compile data with reference to every public market in the United States, and as many as possible in Canada. I know I have not succeeded, but I am here offering, at least, more data than have ever been offered before, and I

would suggest the careful filing of this information, for the reader may be assured that it is as correct as could be supplied by the many commercial secretaries from whom it was gathered. I have paid no heed to building cost, as that is so easily computed by architects of cities which may be studying the question.

It is found that many cities and towns are clamoring for a public market, or that commercial secretaries are promoting the idea. For what reason? What is a public market expected or supposed to do? "Lower the cost of living," is the unanimous reply.

Is this result attained? Has the cost of living been lowered in any of the cities which have public markets? And, if so, the prices of what commodities have been lowered, and in what months?

The cost of living will be lowered through market channels when the ultimate consumer is the customer at the market, and when the selling is done by the originator or producer. That is the end at which the public market is aimed, but which it has not yet generally hit. At the present time the consumer is not doing his own marketing from the producer—he is, in the greatest number of cases, buying from the huckster, who buys from the jobber or commission man, who buys from the farmer. Between the price the producer gets and the price the consumer pays there is the first transportation cost to get the product to the jobber, the jobber's operation expense and profits, his transportation to the retailers, and the retailer's expense and profits. This is just as true in those cities having public markets as in those which have not.

But, a moment! Some argue that when the farmer backs his wagon to the curb at the market and the consumer buys, the end has been reached. That is quite true, and most happily so. But, for how many months is this? In the northern climes it is for June, July, August, September and (for fruits) October. During the other months the consumer is at the mercy of those before-mentioned profit-takers. What is the remedy?—for it must not be understood for a moment that the market cannot be made to achieve its rightful end.

First, it is my belief that no commission men or retailers should be allowed space in the markets for the sale of products which

can be offered by the producer at retail during the months when he is producing; second, I do not believe the consumer should be denied the opportunity of buying, in out-of-season months, from someone as near the producer as it is possible to get; third, I do not believe in the employment of a market master merely because he is a political henchman or ward heeler, or because he is the brother-in-law of someone's cousin.

Let Us Reform the Matter Thus

We shall make our public market the place where the producer and the consumer actually get together for purposes of sale and purchase. We shall allow no middlemen. We shall ship in all products grown in other territory which are demanded, or are out of season. We shall keep in touch with producers in every part of the country. And we shall employ a market master who is a business executive, paying him a salary that is commensurate. Here would be the result:

When goods are in season, the producer and the consumer are brought together in actuality. When goods must be shipped in from a distance, the market master will have gotten in touch with the producer, and will import goods direct from that producer. The only difference then will be the cost of transportation and the expense of operating the market. In the case of fish, meats, tropical fruits, etc., the market master may carry out the direct-buying plan throughout the year, his tropical fruits coming from the importing company.

But, you argue, this makes the municipality a purveyor of foodstuffs. Quite true, if one view be taken of it; and yet, did not one Indiana mayor in 1911 show how it could be done, and did he not cut down the cost to the consumer of all goods he handled? In this day, when we are so liberally and so seriously discussing municipal ownership of water, light and power utilities and government ownership of railways, telegraphs and telephones, it were well to consider a closer regulation by the city of the methods of doling out sustenance from its public market house.

However, if the market master were the lessee of the market house, operating under regulations established by the city, allowing all producers to sell direct at a low cost of rental, and himself shipping in goods not



PUBLIC MARKET, BUFFALO, N. Y.



LEXINGTON MARKET, BALTIMORE

locally produced and selling them at a maximum percentage of profit to be set down in his lease, we might dodge the municipal-purveying idea, and get very much closer to the result desired than we are to-day.

The time has come for thinking in big figures. In every line we find more and more system in getting goods to market, and more and more are producers of manufactured articles trying to cut down the cost of production, and eliminate waste. But, in that one article so absolutely necessary to human life, food, we find the least system at any point, and the greatest possible percentage of waste. In the production of food there are the greatest numbers employed, and every human being is a buyer.

The genius who will weld the producers of food into one great association, and who will then operate public markets in every city, will come some of these days; and with his coming will come the swan-song of the non-producing profit-taker, who will fall back where he ought to be—in the great, God-blessed class of producers from the soil. And, in that day, when a more stable market shall have been created, there will go back to the land myriads of those who are to-day the toilers in the city whom we call the "other half."

Here are the results of my questions on public markets:

Baltimore, Md.

The Lexington Market in Baltimore is the one to which that city points with pride, though there are several other market houses. About 600 wagons are accommodated at the curb space at this Lexington market, and there are 1,200 booths within. No accommodations are given to the public in the way of rest rooms, restaurants, etc., but the idea of comfort stations is now being discussed. The market master receives a salary of \$1,400, while the assistant market masters receive \$400 to \$900 per annum; the cleaners are paid as high as \$660. In 1911 the Lexington Market's expenses were \$9,682, while the receipts were \$17,209, leaving a very comfortable surplus. It is estimated that 50,000 people visit this market on market days. There is no delivery service. The rental and license bring \$25 per annum to the city as revenue from each stall.

Buffalo, N. Y.

There are four public markets in Buffalo, owned and controlled by the city. They are considered a success, as "the people get larger assortment at lower cost," this lower cost brought about "by intense competition." The

market master is paid \$2,200 per annum; total expenses in 1911 were \$19,000 and total receipts \$63,000. The stalls in the main building are rented at \$80 to \$150 per year, those not in main building renting for \$60 to \$150 per year. There are 556 booths in all. During the producing season from 500 to 600 farmers use the markets daily and sell from wagons. The commission men act in a friendly manner toward the market; outside goods are shipped in by various dealers in the market. To each farmer a 6-foot wagon space is allowed; single wagons are charged 15 cents a day; teams 25 cents a day. Their space is reserved daily until 7 A. M. If at that time they are not on the market the space is rented to a huckster. The booth holders in the brick building take out a yearly lease, payable quarterly, in advance. The rent is fixed by the Board of Aldermen through its market committee and superintendent of markets. The main building is open at 4:30 A. M. from April 1 to November 1, and from 5:30 from November 1 to April 1. Only such lines are allowed to be sold on the market as the Board of Aldermen and the superintendent of markets agree to. The main market building closes at 2:30 P. M. Booth holders along streets are open until 4 or 6 P. M. Besides the booths in the main market building, the booths contiguous to the streets and space for farmers, there are hucksters who do business at tables. Weekly tickets are issued to them payable in advance. The charge varies from \$1 to \$2 per week. Besides the superintendent of markets there are two clerks at each market for collecting, at salaries of \$1,100 per year; two sweepers at \$2 per day and a lady caretaker at \$360 per year.

Burlington, Iowa

Fifteen years ago the public market in Burlington was abandoned through lack of interest, and the building was later used as a fire station and finally was torn down and replaced with a modern fire station. Recently labor interests in this city procured a market ordinance, but have gone no further in the matter, the presumption being that they have been unable to secure agreements from the growers to bring their produce to the market.

Calgary, Alta.

The market at Calgary has been in operation only since February, 1912. It is owned by the municipality and is governed by rules and regulations issued by the City Council. The salary of the market master is \$840 per annum. A rental of \$25 per month is charged for the booths, of which there are 24. About 75 farmers patronize the market at a time, and shipments consisting principally of potatoes and vegetables are received from other communities. There is no apparent opposition from commission men and produce dealers. Very little effort is made to keep down prices. Hucksters are permitted in the market and those who, together with some of the farmers, display their goods on a table or stand, pay a fee of 15 cents per diem. Calgary is one of the new cities of the Canadian West, and it is

believed that the completion of several hundreds of miles of interurban railways in the country surrounding the city will place the market on a better basis, as these lines will be of great assistance in bringing the farmers' produce from a distance.

Cleveland, Ohio

There are three markets owned by the city and one owned by a private corporation in Cleveland, all of them well patronized by the public. The increase in custom, however, has not been in proportion to the increase in population. The following data applies to the municipal markets. The market master receives a salary of \$1,800 per year. The annual expenses are \$13,559 for the past year, in which amount no allowance is made for taxes, depreciation or interest on the investment. These expenses include labor, supervision, cleaning, fuel, light, repairs, etc. The three markets furnish a total of about 500 booths, with unlimited curb space for farmers. The booths rent for from \$60 to \$200 yearly, according to location. About 1,100 farmers are allotted 7 feet at curb in the market district at a rental of \$10 per year. Renters of the stalls in the market houses receive shipments from other communities, and wholesale dealers are friend

ly to the market. Competition between the 500 renters of stalls and the fact of their having but a low rent to pay, together with no charge for telephones and no delivery service, keeps down the prices.

Cleveland boasts of having the handsomest market house in the world, its doors having been thrown open in early November, 1912, this West Side market taking the place of the one which has served for half a century. Its cost was \$500,000, exclusive of the site, which



CLEVELAND'S MUNICIPAL FISH MARKET



INTERIOR OF WEST SIDE MARKET, CLEVELAND

cost \$180,000. There are 110 stalls; three aisles of meat dealers occupy the stalls in the center of the floor, while butter, egg and poultry dealers are allotted the stands along the side walls. The fish market is in the northeast end of the building, and the grocery department is just across the floor. All stands are uniform as to size and equipment. The stands are of enameled brick with marble counters. The floors inside the stands are cement, while the aisles are of tile. The entire building is lined with white tile.

None of the stalls have telephones, it being the belief that the use of telephones would tend toward costly delivery and credits.

The shed for fruit and vegetable dealers will adjoin the main building, and will not be complete until spring of 1913.

Champaign, Ill.

The public market in Champaign is owned by the city, and the rules and regulations under which it is operated are governed by city ordinance. The market building and stalls were erected by the Chamber of Commerce. There are fifteen stalls, for which is charged a rental of 15 cents per diem. Temporary sheds may be built on certain adjacent parking, and for these stalls a daily charge of 25 cents is made. The number of farmers using the market varies from half a dozen to all that can be accommodated. Commission men and produce dealers are friendly toward the market; two of the most prominent grocers in town worked for it. No shipments are received from other communities outside the county. Prices are kept down by its being an open market and subject to bargain hunting. The people of the city appreciate the opportunity to buy direct from the producer.

Chester, Pa.

The little city of Chester has a public market owned by a privately-organized company and regulated by this company. The market master receives a salary of \$100 per annum, and the other expenses consist of interest on the investment, taxes and general maintenance. There is a license charge made of \$1.00 per week for each booth, and in the market there are 100 booths. The market is used at the present time by about 20 farmers, and reports from Chester are to the effect that the commission men are opposed to the market.

Cincinnati, Ohio

The public markets of Cincinnati number four, all owned by the city, the rules and regulations being governed by ordinances passed by the City Council. The annual expenses of \$12,000 per annum include the salary of the market master, which is \$900, and repairs to market houses, heat, light and miscellaneous expenses. Inside stalls, which are occupied by the butchers, butter vendors, etc., bring a yearly rental of \$100, and a yearly payment of \$15 entitles the payer to a stand 6 feet wide on the curb. A certain amount of space is set aside for farmers and truck gardeners, and they may occupy this space free of charge.

Approximately 500 farmers use these markets. Commission men and produce dealers do not clash with the markets, and during the season commission men receive shipments of fruits from other communities at the market houses. The success of the Cincinnati public markets is unquestioned, the city receiving an average net income from them amounting to \$1,000 yearly, and they make it possible to place all foodstuffs before the class of people who need them most.

Columbus, Ohio

There are four public markets in Columbus, Ohio, all owned and operated by the city. They are the Central Market, 148 stalls and stands; North Market, 237 stalls and stands; East Market, 139 stalls and stands; West Market, 81 stalls and stands. They are used for various kinds of business—meat, butter, eggs, cheese, bakery products, hominy, fruits and vegetables, fish, honey, flowers, poultry. The number of people employed is over 2,000. Receipts from all markets in 1911 were \$28,998 and expenses were \$16,183. The commission men are friendly to the market, but attention is also called to the fact that commission men occupy the booths, and that there are only 16 curb stands for farmers. The report from Columbus says that the lowering of prices by the market is "not perceptible."

Dayton, Ohio

There are three successful markets in Dayton, one owned by private individuals and two owned by the city. Two of these markets being in the downtown district, the market days are divided, the older market being open on Tuesdays, Thursdays and Saturdays; and the other, known as the Wayne Avenue Market, being open on Mondays, Wednesdays and Fridays from 5 to 10.30 A. M. The older of these two market houses was erected almost 40 years ago and has had no recent improvements. Its vegetable stalls are rented for \$100 per year and the butcher stalls for \$250 per year. The Wayne Avenue Building is a recently completed structure costing \$35,000, and the stalls rent from \$12 to \$20 per month. The downtown district also contains eight or ten squares, where curb spaces are auctioned off in May of each year at prices ranging from \$15 to \$300 per year for each space. The income from these rentals is approximately \$30,000 each year, while the expense approximates a total of \$2,600 a year, making a good profit to the city. The Arcade Market Building is a model market, having a complete modern cold storage plant in the basement and affording some 12,000 square feet of cold storage space. It is open from 6 A. M. (or earlier) to 6 P. M. every day and until 10 or 11 P. M. on Saturdays. Vegetable stalls are rented for from \$6.50 to \$8.75 per month; butcher stalls, from \$35 to \$40, including cold storage. There are 200 stalls in this market, and the annual rental receipts amount to about \$20,000 per year. The public market in Dayton has been established since 1815 and is patronized by all classes. Prices are slightly lower than those of the retail dealers, and the produce is always clean

and fresh. The markets are supplied from the immediate country, and no shipments from other communities are received. Commission men are friendly.

Denver, Col.

The market in Denver is owned by the city, and rules and regulations are adopted by ordinance. It is now considered a success, though formerly it was operated by private parties, and failed to satisfy the gardeners and general producers. The market master receives a salary of \$100 per month, and besides his salary the salaries of an assistant and of one police officer are paid, the cleaning being done by the street cleaning department. A minimum rental of \$2 per month is made for booths, of which there are 238 under corrugated iron roofs. A large number of farmers use the market during the season, which extends in Denver from May until October. Commission men and produce dealers act friendly to the market, which, however, does not receive commodities from any other community.

Des Moines, Iowa.

The Des Moines public market is owned by the city and governed by city ordinance. A new market house is now in course of construction, and upon its completion, early in 1913, will afford 76 booths. During the present season the market has used a street space, and has been patronized by 30 wagons in one day. The annual expense of the market is estimated at \$2,000, of which the market master receives \$1,400 as his salary, and the rest is absorbed by such miscellaneous expenses as payment for

extra help and livery hire for scale inspection. Shipments of peaches, apples, potatoes, etc., in carload lots, are received from other communities. The market has had no trouble with commission men, but is considered eminently successful in eliminating the middle man to a great extent. Prices are kept down by competition, which is aided by closing the market promptly at 1 P. M.

Detroit, Mich.

In Detroit there are two markets, both owned by the municipality. In regard to their success comes the reply: "Yes, because they have been successfully operated for many years." The market master gets a salary of \$900, and the total expenses of the two markets in 1911 were \$6,474. Neither market is enclosed, each being nothing more than a cement foundation with a raised walk, forming a cross in the center of a square city block, the walks being about 60 feet in width, to which all wagons back, permitting the customers to pass around and examine the products and ascertain the prices. These walks are sheltered by roofs. There are no booths or stands. In the case of Detroit, there appears to be the nearest approach to direct marketing from the producer to the consumer.

Duluth, Minn.

The market at Duluth is owned by the city and is regulated by the City Council. It is of recent establishment, having been opened in Duluth in the middle of the year 1912. Prospects are good, but no authoritative statement can be made. The market was opened



THE DETROIT PUBLIC MARKET

in the Armory and small, covered booths are used in two other markets. In the Armory building, which is known as the Main Market, as many tables as are necessary are placed, there being eight at the present time. At the close of the summer season of 1912 about 25 farmers were using the market daily. No plans had as yet been made to receive shipments from other communities, the market being open principally for the sale of locally produced commodities.

Dubuque, Iowa

The market in Dubuque has been maintained for more than 50 years, and it is patronized by all classes of people. Early in the morning, particularly on Wednesdays and Saturdays, swarms of buyers may be seen coming from all directions with baskets and carts to get first choice at low cash prices of all the goods displayed. The accompanying view shows some of the wagons of the country vendors of vegetables, fruit, flowers, poultry, meats, butter, eggs, etc., backed up near the curb in front of stores near the market house. On the morning when this picture was taken more than 300 different teams were counted within ten minutes, and the ones lined up against the curb would have occupied more than 16 linear city blocks. The market house is modest in character, but the market is used to the evident satisfaction of the people in effecting economies.

Fort Wayne, Ind.

Taking the place where an old market house stood, Fort Wayne has constructed a new building for market purposes, the funds for this purpose having accumulated over a period of years. The building is 450 feet long and 27 feet wide, and is built of concrete. The pavilion contains public toilet rooms and a smoking room. The market teams back up to the curb along the house, and the purchasers have a passageway from which they may buy. Between the separating columns are tables built of concrete, which are used for marketing purposes. No reports are obtained from Fort Wayne as to the cost of occupancy of booths nor as to the expense of operating the market.

Grand Rapids, Mich.

Grand Rapids makes the claim of having the largest wagon-market in the world, not only being self-sustaining but a profit-producer. It is owned and operated by the municipality. The market master receives \$1,000 per year, the annual expenses of the market being \$4,000. The stall rents are from \$5 to \$25, there being 760, of which 372 were rented in 1912. Farmers using the market number from 100 to 200 per day, paying a daily entry fee of 25 cents. The commission men are friendly and coöperate. Goods are shipped in from other localities during out-of-season periods, these being fruits



THE MUNICIPAL MARKET IN DUBUQUE

and vegetables. The total annual income approximates \$10,000. Every effort is made to attract, the buildings being repainted each year.

Greensburg, Pa.

The market at Greensburg is a curb market operated under the Board of Trade, the Secretary acting as market master without additional salary. This market is about a block and one-half in length, and is used by an average of 25 to 30 farmers. No charge is made for stands, and the market has no expenses. It is considered a success in reducing the high cost of living by bringing the consumer in direct touch with the producer, while the effort to keep down prices by competition between the produce dealers and the producer is aided by the formation of a Women's Marketing Club. Commission men and produce dealers are opposed to the market. It does not receive commodities from other communities.

Hagerstown, Md.

In Hagerstown a successful market, well patronized by farmers, brings the city a cash revenue of \$2,600 per year. The annual expenses, amounting to \$700, are for light and heat, in addition to the market master's salary of \$600. The 100 booths in the market house may be rented by the year at from \$5 to \$10, while the farmers pay 10 cents per day for space if they do not care to rent stalls. The number of farmers using the market is in the height of the season 600 or 700, while during the cold months and in bad weather the number may drop to as low as six or seven. Competition is encouraged by granting permits to a number of persons to sell the same product, and then placing them in adjacent stalls. This is the only method used to keep down prices. Commission men and produce dealers are friendly toward the market. During the spring months shipments of southern vegetables are received and fish is shipped in during the entire year.

Hamilton, Ohio

Hamilton has an open market, operated under the direction of the city. The only expense attached to this market is the market master's salary of \$360 per year. It has between 150 and 175 booths, for the use of which no charge is made. Some shipments of fruit are received from other communities, and there is no friction with the commission men and produce dealers. As a rule, prices are slightly less than those of the dealers; and the market, which is an old institution, is well patronized.

Hamilton, Ont.

The public market of Hamilton is owned by the city, and is governed by rules and regulations issued by the Council of the Corporation of the City. The market clerk receives a salary of \$1,900 per year and secures his own help. In addition to this expense is that of the caretaker, who receives \$720, and repairs amount to from \$300 to \$1,000 annually.

This market is kept strictly for farmers and butchers. During the busy season it is patronized by from 300 to 600 wagons in one day. No shipments from other communities are received and nothing is sold in the market except the produce grown by the farmers. Prices are controlled by supply and demand.

Indianapolis, Ind.

The market of Indianapolis is owned by the city and is considered by all to be a success, city ordinances governing. The annual expenses of the market are \$12,500, of which the market master receives \$1,320, the remainder being applied to an assistant, four janitors, two engineers and firemen, light, heat and garbage removal. The rental charge for booths is from \$25 to \$150 per year. There are 615 booths inside the building and 300 curb stands for farmers, for which a charge of 25 cents per diem is made. The statement which the writer received and the investigation which he has made show that the commission men and produce dealers are opposed to the market. The market receives shipments of tropical fruits and vegetables from the South, and every effort is made to hold prices down by competition.

Joliet, Ill.

Established by the municipality and operated under the direction of the city, the public market of Joliet started last year under successful conditions, but, for reasons unknown, interest during the present year has perceptibly decreased. The chief expense is the market master's salary of \$75 per month. During the summer season 25 to 50 wagons occupy the open market and pay a charge of 10 cents per wagon, while the rental for winter quarters in a commodious one-story structure, originally built for a skating rink, is according to the space used. To a limited extent shipments are received consisting of fish, apples, eggs and potatoes. Commission men and produce dealers are disposed to be neutral. Prices are kept down by the encouragement of wholesome competition.

Kalamazoo, Mich.

An unsuccessful public market is operated by the city on one of the public streets. It caters largely to the hucksters and small dealers, neglecting the retail buyers. This has led to the formation of plans for a market building, to be operated by the city, with the purpose of supplying the retail consumer. The present market is patronized by about 75 farmers and truck gardeners daily. It does not receive shipments from outside communities, and makes no effort to keep down prices.

Kansas City, Kans.

There is here a public market which is owned, however, by a stock company, and the rules and regulations are established by this company. The market may be considered a success when it is stated that it has paid to the stock company four 6-per-cent dividends in six years and has set aside \$4,000 as surplus.

The market master receives a salary of \$480 and the annual expenses of the market, including this salary, are \$1,800. The market building proper is occupied by wholesale farmers, but about 75 farmers gather each morning at the curb, for which they pay 25 cents per morning, or from \$9 to \$12 per season, for wagon space of 7 feet, this latter payment giving the farmer a regular place to stand. Commission men are friendly and the market receives shipments from other communities, principally fruit, vegetables, butter and eggs. No attempt is made to hold prices to a minimum.

Kansas City, Mo.

The public market in Kansas City is owned by the city, and the rules and regulations are made by city ordinance.

The market master receives a salary of \$1,800 per year, and the annual expense of the market is \$10,000, which includes the salary of the market master and those of scavenger, janitors, matron, night watch, and the cost of supplies and repairs. About 2,500 or 3,000 farmers patronize the market, about 250 of them being present each day. There are 140 booths, for which a rental of \$2 per front foot per month is charged, and the farmers all pay the market a fee of 25 cents on each wagonload of produce marketed. Commission men and produce dealers are generally opposed. The market receives shipments of fruit and vegetables, and while it makes no direct attempt to keep down prices, they are reduced as a result of competition.

Lancaster, Pa.

There are six markets of a public nature in Lancaster, one being owned by the city and five by private companies. The rules which govern that owned by the city are used substantially by the five private companies. The markets are all considered successes, as they are paying properties for the owners. The market masters receive an average of \$1 per day. Information of such character was received that an estimate cannot be made of the annual expenses of the market, but they consist of the salary of the market master, taxes, fire insurance and interest on the investment. The markets are not open every day, sometimes opening two days a week and at other times three days. The booths are sold to the highest bidder, the average price being \$15 per annum for use one day each week. If the market is open two days and the booth is used two days each week, the price is \$30. There are about 200 booths in each of the six markets. Farmers rent the booths at the regular price, some making their stands at one market and some of the farmers using more than one market. Commission men use the market the same as the farmers, and receive shipments of fruit, potatoes, fancy vegetables and fish from outside communities.

Lethbridge, Ont.

Five years ago an attempt was made to operate a public market in Lethbridge, but it was not a success owing to the competition

of Chinese vegetable peddlers. Since the abandonment of this market, however, the growth of vegetables and garden truck has increased rapidly and drafts of plans for a new market building have been prepared, with a view to the reestablishment of a public market.

Lincoln, Neb.

Opposition on the part of the gardeners at Lincoln has prevented the success of the curb market there. This opposition arose as the result of a misunderstanding of the purpose of the market, the growers having gained the impression that it would favor the wholesale and retail dealers to the prejudice of the growers. This market is located on the curb and no expenses attaches, the position of market master being filled by one of the sanitary inspectors of the Board of Health. A few of the gardeners paid a fee of \$1 for the reservation of a certain space for their use, but the majority stationed themselves in any unused space and paid no fee.

Little Rock, Ark.

A private enterprise, known as the City Market & Arcade Company, has been organized in Little Rock, and is at the present time building a market house and arcade on a block of ground in the heart of the city. The expenses of this project will amount to about \$400,000, and it is expected that the building will be complete in the spring of 1913. No further information is at present obtainable.

Louisville, Ky.

The public market in Louisville is a private stock company, known as the Gardeners' and Farmers' Market Company, 90 per cent of the stock of which is owned by truck farmers around Louisville. The market master receives a salary of \$1,500 per annum. No report could be obtained from the company as to the annual expense and the analysis of this expense. Unlike many markets, the prices of booths are not set, but the booths are sold at auction each year. There are between 500 and 600 booths. Between 300 and 400 farmers use the market daily, and from all appearances the commission men and produce dealers are friendly to the market, which receives no shipments from other communities.

Madison, Wis.

The city of Madison opened a public market in 1911 in a building measuring 130 x 75 feet, and provided with wash rooms, toilet rooms, tables for luncheon, smoking rooms, etc. Madison has been practically in the hands of the provision merchants and commission men, and an effort was made by circularization of farmers to break the hold which the local dealers had. The response was a large one, and to-day Madison is enjoying a direct trade between producer and consumer. The market is open from 7 A. M. until 6 P. M. every day except Sunday. The charge per day for space is 25 cents. In cases where hay or wood is sold the weight or measure must be certified



Courtesy of *The Survey*

FIRST SCREENED MARKET IN NEW ORLEANS

by an official of the city, and a certificate must be given, which costs 10 cents. Wagons for the sale of produce are prohibited the use of public streets or alleys away from the market place. Wisconsin produce cannot be sold in the market by any other person than the producer.

Memphis, Tenn.

The public market of Memphis is owned by the city and the rules and regulations are governed by ordinance. It is a well patronized market and the receipts pay all expenses and leave a surplus to the city. The annual expenses of the market are \$6,300, being divided as follows: Interest on bonded debt, \$3,000; market master and janitor, \$1,680, of which the market master receives \$1,200; light, \$1,200; miscellaneous, \$420. There is a regular charge of \$12.50 per month for booths, of which there are 30. Farmers to the number of 300 to 400 use the market, taking stands in the market yard and selling to the consumer and to hucksters. Commission men are deemed to be friendly, as they buy from the farmers and very often sell to the hucksters. The market receives no shipments from other communities.

Milwaukee, Wis.

Many years ago a large market was maintained in this city, but with changing conditions it became unpopular and was finally abolished. Lately a Market Commission has been appointed by the Mayor, with a view to establishing several public markets throughout the city. Certain sites have been selected for this purpose, but the project is not sufficiently advanced to furnish any data. The object in establishing these markets is to bring food

products that are raised in the immediate vicinity of the city more directly to the consumer, and thus decrease the cost of living.

Montgomery, Ala.

Montgomery, the capital of Alabama, has a public market which was closed several years ago and is lying idle and vacant. Its abandonment was due to the growing tendency to patronize hucksters and street peddlers, the public not coming to the market. This market occupies the entire ground floor of the City Hall, which covers half a block.

Nashville, Tenn.

The city of Nashville owns the public market in that city and it is regulated by city ordinance. The market master receives a salary of \$80 per month. The rental for the booths in this market, of which there are 150, is \$125 per year. Farmers sell their produce from their wagons around the market, and several commission men have wholesale stalls in the market house. Some shipments are received from other communities. Prices in Nashville are reasonable, and it is considered that the market acts as a regulator of the prices of foodstuff.

New Orleans, La.

New Orleans has had a public market since the first year of the 19th century. The market house was ruined by a hurricane and rebuilt in 1812. One after another was built until to-day there are 23 markets owned by the city and 11 privately owned through franchise from the city, by virtue of which franchise they will revert to the city in a period of years. New Orleans is surrounded by a large area of

market gardens, which supply fresh vegetables and fruits at all seasons of the year. The existence of two large public abattoirs allows the selling of meat without large investment, as a stall may be rented for 50 cents per day, and a butcher may have his cattle killed by payment of \$1.00 per head to the abattoir, this price including storage for ten days. The price for stalls (meat or vegetables) is 50 cents per diem; fish and game stalls rent at 15 cents per diem, and fruit stalls at 2 cents per square foot. Markets are open from dawn to noon, after which cleaning is done. Peddlers are allowed license, but cannot operate until after noon.

There is much agitation about selling the markets, instead of issuing bonds to build new ones to take the place of old; but this agitation is being stoutly opposed by those who fear the "meat trust." The estimated revenue for 1912 from the markets is \$190,000, but no definite reports were received on expense.

Newark, N. J.

There is a public market in Newark which is owned and operated by the city, ordinances being adopted for the purpose. It is considered a success, both from the viewpoint of "living cost" and the returns to the municipal government. The market master is paid \$2,400, the total expense account being about \$23,000. Against this there showed receipts in 1909 of \$53,251, in 1910 of \$57,820, and in 1911 of \$57,304. The expense sheet consists of salaries, light, heat, garbage disposal and maintenance. There are 125 booths. There are three "market days" per week, at which times there are about 300 farmers ready to sell. All reports show commission men to be friendly. The market sells no produce from other communities or sections of the country.

New Brunswick, N. J.

At the present time there is no public market in New Brunswick, but local business men are now incorporating a company for the purpose of establishing a market, one of the purposes of which will be to keep down the prices of food.

New York City

The city of New York now has under its jurisdiction six public markets, namely, Washington, Fulton, Jefferson, West Washington and Gansevoort Markets in the Borough of Manhattan, and Wallabout Market in the Borough of Brooklyn.

Washington Market. Retail.—Established 1812. Covered market, 175 x 253 feet. Assessed valuation of land, \$880,000; building, \$20,000. Average annual receipts, \$54,000. Average annual expenditures (other than loss by exemption from taxes), \$15,800. Average charge per square foot, \$2.00 annually. Size of stands, from 5 x 5 feet to 9 x 12 feet. This market is located in the lower westerly part of Manhattan, and the trade is principally with restaurants in the downtown business section and individuals doing business in the city and residing in New Jersey suburbs. Open from 5 A. M. to 6 P. M. daily, except on Saturday, when the closing hour is 11 P. M.

Fulton Market. Wholesale, fish; retail, general.—Covered market, 203 x 170 feet. Assessed valuation of land, \$450,000; building, \$75,000. Average annual receipts, \$37,500. Average annual expenditures (other than loss by exemption from taxes), \$9,700. Average charge per square foot, \$2.00 annually. Size of stands, from 5 x 5 feet to 9 x 12 feet. Located in the lower easterly part of Manhattan. Twenty-five years ago the revenue from this market was 100 per cent more than at present. The opening of the Brooklyn and other bridges and tunnels across the East River, and the subsequent improvement in transit facilities, affected the revenue, and this market will probably be abolished in the near future. Business is principally with hotel and steamship lines. Open 6 A. M. to 6 P. M.

West Washington Market. Wholesale.—Dressed meats and country produce. Covered market, 389 x 400 feet. Assessed valuation of land, \$950,000; building, \$150,000. Average annual receipts, \$108,700. Average annual expenditures (other than loss by exemption from taxes), \$9,800. Size of stands, 9 x 20 feet. Rental, \$450 and upward per annum. Located in middle west side of Manhattan, on water front. In and about this market the meat and poultry supply of the city is handled, the business being very extensive in this locality. A large commission business is also done. Great quantities of fruit and vegetables coming to the city by freight are dealt in within a radius of six blocks of this market. Open 4 A. M. to 2 P. M.

Gansevoort Market.—An open square restricted to farmers' and gardeners' wagons. Assessed valuation of land, \$600,000. Average annual receipts, \$7,800. Average annual expenditures (other than loss by exemption from taxes), \$8,500. The local farm produce is offered from the farm wagons here, and is sold to grocers, hotels and restaurants. There is no restriction, however, upon the farmer as to his customers, but there is little, if any, produce sold direct to the actual consumer. A nominal fee of 25 cents is charged each wagon daily. Open 9 P. M. to noon the following day.

Jefferson Market. Retail.—Triangular in shape, with an area of 36,000 square feet. Covered market. Assessed valuation of land, \$150,000; building, \$40,000. Average annual receipts, \$10,200. Average annual expenditures (other than loss by exemption from taxes), \$4,000. Charge per square foot, \$1.00 annually. Early in the eighties this market was one of the best in the city, but owing to the encroachment of business buildings in this section the patronage has fallen off, so that it will soon be abandoned as a public market. Open 6 A. M. to 6 P. M.

Wallabout Market, Brooklyn. Wholesale; general.—Covered, with open square for farmers' wagons. Assessed valuation, \$1,390,400. Average annual receipts, \$82,500. Average annual expenditures (other than loss by exemption from taxes), \$22,500. This market supplies the large and rapidly-increasing residential section of the Borough of Brooklyn. The manner of letting differs from all other city markets, the land being laid out in lots

averaging 20 x 50 feet, and leased for a term of ten years with the privilege of a renewal. The lessees put up their own buildings, which conform to a uniform style of architecture and do not exceed two stories in height, giving the market a very attractive appearance. The rental per lot is \$7.00 and upward monthly. Located on water front. Open from 4 A. M. to 2 P. M.

There is no market master in New York, the chief being the superintendent of markets, and being in reality an executive head. Farmers use the market squares, of which there are two—one in Manhattan and one in Brooklyn. The maximum using each market square is 700, and the minimum is 100. Shipments of commodities are brought in from every part of the United States.

Niagara Falls, N. Y.

The public market in this city is owned by the municipality. It draws from a rich fruit- and vegetable-producing country surrounding the city, and receives shipments of these products from country within 20 miles in radius. The market master receives a salary of \$70 per month. The annual expenses amount to \$1,000, and include the salary of market clerk and supplies. This is a curb market. A charge is made of 15 cents for double teams and 10 cents for single teams each day they use the market, which is open on Tuesdays, Thursdays and Saturdays. About 150 farmers patronize this market. Commission men are friendly, and no attempt is made to keep down prices.

Norfolk, Va.

The market here is owned by the city and operated under rules and regulations provided by city ordinance. The total annual expenses are \$2,611, of which the market master receives \$1,200, the remainder being for repairs, salaries and miscellaneous expenses. The income from rentals amounts to \$17,011. The number of farmers who use this market varies according to the season and the weather. They pay 10 cents per diem for space for a single wagon and 15 cents for a double wagon, hucksters being charged at the rate of 25 cents per diem. Commission men and produce dealers are friendly to the market. Individual dealers in the market receive shipments of fruits and vegetables, which vary according to the season. No attempt is made to keep down prices. This market is not considered a success.

Norristown, Pa.

The borough of Norristown owns the public market of that city, which is operated under rules laid down by the borough. The market is open three days each week: Tuesdays, Thursdays and Saturdays, the hours of sale being from 3 A. M. to 11 A. M. on every market day, and also from 4 to 9 P. M. every Saturday. The market master receives a salary of \$480 per year. The annual expenses amount to \$840, which includes the salary of the market master and necessary repairs. A rental of \$15 and \$25 is charged for

booths, of which there are 156. The market purchases shipments of meats and produce from other communities. It has no trouble with commission men and produce dealers. No record is furnished of the number of farmers using the market. It is not considered as successful as it formerly was, and this is believed to be due to the establishment of stores throughout the borough.

Oklahoma City, Okla.

Oklahoma City has received much publicity in the latter months of 1912, owing to its establishment of a city market which consists of stalls along one of the widest streets. This open market was established May 21, and 80 stalls were occupied. By the middle of August the number of stalls in use was 318, these extending along three blocks of the street. The people of Oklahoma City argue that the wonderful success of the street market indicates the need of a market house wherein products such as meat, fish, butter, eggs, poultry, vegetables and fruits may be sold. Oklahoma City is to-day experiencing the same feeling that has existed in all of the cities where markets were opened; that is, the importance of direct contact of producer and consumer, and it behooves Oklahoma City to see that the middleman and the huckster do not crowd the producer out of the selling market.

Omaha, Neb.

At one time the city of Omaha had a public market building, but as the market was not a success this building was torn down, and at the present time the market is located on a vacant lot, where stalls have been erected by the city. There are 140 of these stalls, for which a charge of 10 cents per day is made. The market is owned by the city, and is patronized by from 90 to 125 farmers, who sell direct to dealers and peddlers. The market master receives a salary of \$1,200 per year. The annual expenses of the market are \$1,250, which includes the market master's salary and the expenses of printing. Commission men are not opposed to the market, which does not receive shipments from other communities and does not attempt to keep prices down.

Ottawa, Ont.

A successful public market has existed in Ottawa for 25 years under the ownership and government of the municipality. It has proven a most economic feature in the cost of living and in providing pure food. The market inspector receives a salary of \$1,400 per year. Nine collectors, weighman, etc., receive \$700 per year. A market fee of 10 cents is charged for articles brought to the market place in a vehicle drawn by two horses; upon articles brought by a vehicle drawn by one horse, 5 cents; upon articles brought by hand or in a basket or vessel, 2 cents. A fee of 10 cents is charged for each horse, mare or gelding brought to the market for sale; 5 cents for each head of horned cattle; 2 cents for each sheep, calf or swine. This fee is collected immediately upon the articles being exposed for



A SECTION OF THE "BYWARD" MARKET IN OTTAWA

sale. Hucksters, grocers, butchers and wholesalers are not permitted to purchase before the hour of 8.30 A. M. any of those articles for family use that are in demand by the consumer.

Philadelphia, Pa.

Whether the public market is passing out of Philadelphia or is merely undergoing a transition is a moot question there. In that city the municipally-owned markets are known as "sheds," and of the markets which have been operating in recent years but two remain. They are directed by the Department of Public Works, the annual expense being \$1,550 for upkeep and salary of clerk. From \$6 to \$60 per year is the rental charge.

In October, 1912, two of the public markets were transformed into motion picture houses, while others of the privately-owned market houses are undergoing repairs now and then which are intended to make the places more sanitary.

An effort is being made by the authorities of Philadelphia to bring the producer and consumer closer together, the first effort being developed in a pamphlet entitled "A Study on Trolley Light Freight Service and Philadelphia Markets." This pamphlet throws some new light on the question of markets, and will illuminate many of the dark corners of this important subject.

The privately-owned market houses number 21, and have an assessed valuation of about \$2,000,000. There is quite rapidly developing a demand for the old-style curb market, where the producer might sell direct to the consumer, for such ideal marketing does not exist to-day, all bartering being done between the consumer and a middleman.

Pittsburgh, Pa.

The public market in Pittsburgh is owned by the municipality, and its rules and regulations are established by ordinance. The city operates three markets, but the data herein given concern the central one, or what is known as the Diamond Market. The market master receives a salary of \$1,500 per annum, besides which there are expenses to the extent of \$16,100, making a total of \$17,600, which includes salaries and labor, materials and supplies, fixtures and repairs for the buildings. These expenses cover all three markets. The rental charge for the booths is from \$216.50 to \$591.25 per annum, depending on the location. There are 194 booths, besides which 25 farmers have permanent stands for the sale of their own produce. It might be stated here that besides these 25 farmers, between 100 and 200 farmers use the second story of this market on Tuesdays, Thursdays and Saturdays for the sale of their goods. The space on this floor is set aside exclusively for farmers, and no charge is made. Shipments from other communities are received, these being principally fruit, vegetables, fish and oysters, and every attempt is made by the city to encourage competition and thus hold prices down. Pittsburgh also operates the market on the Monongahela Wharf, at which the farmers sell their produce both at wholesale and retail.

Portsmouth, Va.

The public market of Portsmouth is owned by the city, and is governed by city ordinance and rules laid down by the City Council. The market master receives a salary of \$50 per month, and his assistant receives \$30 per month. The additional expenses are estimated

at \$350 per annum, and include repairs, changes and incidentals. The market contains 20 booths, and the hucksters' shed contains 24, a total of 44. Rental for booths in the market is graded according to location, the highest price being \$12.50 per quarter. Probably 30 to 50 farmers use the market, selling from market carts and paying 10 cents per day for the privilege. Fruits, vegetables and poultry are received from other communities. There is not known to be any opposition on the part of commission men and produce dealers. The market, however, is not successful, owing to the fact that most of the housekeepers prefer to buy at the convenient and attractive private markets, tea stores and green grocers nearer the residence portion of the city.

Raleigh, N. C.

Though the market in Raleigh is an old one, an investigation leads to the conclusion that the market system has proved satisfactory here, and the city is planning to put up a new building. The present market is owned by the city and has a revenue of \$5,000 per year. The salary of the market master is \$75 per month. The annual expenses of the market are calculated at \$1,300. There is no debt on the building, for it was built in 1870 and the debt was paid off twenty years ago. Rentals charged for the booths in this market vary from \$8 to \$28 per month, and there are at this time 21 booths occupied. Farmers use the market without restriction, placing their wagons outside, for which there is no charge, and they have the right to sell anything they produce. Commission men are found to be entirely friendly to the market, which also receives commodities from other communities, these being principally meats, fish, oysters, game and vegetables. There is no attempt made to hold prices down.

St. John, N. B.

The Common Council of St. John issues rules and regulations to govern the public market of that city, it being under municipal ownership. These regulations provide that no person may purchase at the market with intent to resell any article that has not been exposed for sale at least three hours between sunrise and sunset on a market day, thus giving the consumers a chance to make their purchases direct from the producers. The market master receives a salary of \$800 per year. The annual expenses are about \$14,000, and include the market master's salary, repairs, light, heat, insurance, water rates, interest and sinking fund. There are 43 commission stands and 18 butcher stalls, for all of which a rental is charged. It is a country market only and farmers come from a long distance, as well as from the immediate vicinity of the city. Commission men and produce dealers act friendly. Prices are governed by other city prices.

St. Joseph, Mo.

The public market of St. Joseph is owned by the city, and regulations are adopted by the City Council. The market master receives a

salary of \$780 per annum and the additional expenses make the total \$880. A regular rental is charged for the 20 booths and 200 curb permits, the total fees being about \$3,000 per annum. As shown in the statement concerning curb permits, about 200 farmers use the market. Commission men act friendly to the market, purchasing the surplus after market hours, which are from dawn until 10 A. M. during the months of April to September, and until 11 A. M. from October to March; and the market is open from 4 to 8 P. M. on Saturdays. The market master announces the closing of the market house by ringing a bell ten minutes before closing time.

St. Louis, Mo.

In St. Louis there are four markets, owned by the municipality. They are looked upon as successes "in a moderate degree, as they offer a large selection at slightly lower prices than groceries and meat markets." At the Central Market the master receives \$1,000 per year, while the other market masters get \$65 per month. Expenses at Central Market are \$7,000 per year, while the income is \$50,000. Farmers sell at only two of the markets, and commission men are said to be friendly, probably due to the fact that they run the market stalls and booths.

St. Paul, Minn.

Because it furnishes a well-patronized central point for the assembling and sale of produce, the public market of St. Paul is considered a success. It is owned and operated by the city, paying a salary of \$1,000 to the market master, and having other expenses of \$4,000, being for the sealer of weights and measures, watchman, janitors, heat, lights, team hire, etc. There are 12 booths and 300 stalls, the rent varying with size and location, the average in 1912 being \$15.80. Many farmers use the market, and the commission men are friendly. Very seldom are shipments brought in, but they consist of apples and potatoes when they are made.

San Antonio, Tex.

There are in San Antonio both the market house and a "market plaza" where the producer meets and deals with the consumer. The market house is 120 x 225 feet, with 58 booths on the lower floor and a hall with seating capacity of 4,000 on the second floor. In order to build the place the citizens of the neighborhood raised one-half and the city paid the remainder, the building having been erected about 15 years ago. The booth charge is \$10. The house is self-sustaining, having monthly expenses of \$350. Street vendors have to pay a heavy license, thus forcing the people to the green grocer or the market. In the booths are found 16 butchers, who handle meats killed at home and some foreign meat.

The market plaza is the curb market, where farmers drive into a great square enclosure, at no cost, and offer their goods. To this market go people of every class, on foot, in buggies and in automobiles. At marketing time in the



INTERIOR OF WESTLAKE PUBLIC MARKET, SEATTLE

plaza prices are about 65 per cent of those asked by green grocers. The market master is, in reality, as in most cities, merely the boss of the janitor. Every attempt is made to make the market place sanitary. Just now there is agitation to place a roof over the great open space known as "market plaza," which lies just to the west of the market house.

Schenectady, N. Y.

A public market, owned by the city, has recently been opened, but as yet no data are obtainable concerning buildings or management. The plans, however, include numerous arc lights, feeding sheds, watering troughs, comfort stations, etc., and an effort will be made to establish a completely up-to-date market.

Seattle, Wash.

The public market in Seattle is owned by the city, with large auxiliary adjoining markets owned by private parties. There are about 250 booths in this market, for which a charge is made of 10 cents per diem. During the winter months about 50 farmers use the markets, and this number increases to 250 in mid-summer. The market master receives a salary of \$110 per month. The annual expenses of the market are about \$3,900, being divided as follows: Interest, \$600; market master, \$1,320; janitor, \$720, and inspector, \$1,320. Commission men and produce dealers at first opposed the market, but at present they regard it with apparent indifference. The natural competition engendered by the establishment of the

market keeps down prices throughout the city retail stores. Larger stocks and greater variety are supplied by the market, although no commodities are received from other communities.

The Westlake Public Market in Seattle is owned by a private corporation. The annual expense is \$40,000, made up of advertising, free delivery, janitor's services, light, water, refrigeration, etc. No rental is charged for permanent booths inside the market house, but on the curb the charge is 20 cents per diem for each table. There are about 100 booths and the market is patronized by about 100 farmers, who consign their goods to dealers or sell directly to the consumer. Commission men and produce dealers act friendly toward the market, which receives shipments of fruit and vegetables from other communities. Prices are kept down by competition. The market is considered a success because of the large volume of business and the large number of satisfied customers.

Sherbrooke, Que.

The public market in Sherbrooke is owned by the municipality and is governed by rules and regulations passed upon by the Municipal Council. It has proven a source of revenue to the city, and a benefit to both the farmers and the consumers. The annual expenses amount to about \$900, including cleaning, printing and general repairs. The market clerk also acts as City Collector, and \$200 of his salary is charged to the market. The average number

of farmers who use the market once a week, on Saturdays, is 125. A small rental is charged for booths. Commission men and produce dealers are friendly. Shipments of farm produce are received from adjoining counties. No attempt is made to keep down prices. As a protection to the consumer it is provided that no trader, grocer, huckster, butcher or dealer in provisions shall buy any of the articles required for family use which are brought to the market for sale until after the hour of 10 A. M.

South Bend, Ind.

In South Bend a curb market on one of the wide concrete bridges was established about one year ago. It is open from early morning till noon on three days each week, and is used by an average of 75 farmers and market gardeners who back their wagons against the side walk on the bridge. During inclement weather a building adjacent to the bridge is used as a market house, the merchants of the vicinity contributing the funds to fit this building with stalls, for the use of which no charge is made. No charge for space on the curb is made, and the market is conducted with very few rules or restrictions. The position of market master is filled by the City Sealer. In the beginning a highly organized peddling system, which had grown up through the lack of a market, attempted to handicap the market by buying out the farmers at wholesale prices and selling the stock at higher prices than would otherwise have prevailed. The market adopted rules which, for a time, forced the peddlers entirely from the market, but at present they are allowed at the market, subject to certain conditions. The market is considered a success in the way of opening a larger field for the truck gardeners and reducing prices to the consumer. No commodities are received from other communities, with the exception of fish.

Spokane, Wash.

Spokane has two markets, owned by private parties, the stalls of which are sold at auction each year. The streets in front are divided into plots by the city and the market inspector is in charge, renting the street spaces at a small fee—barely sufficient to pay his salary. Reports are that retail merchants oppose the markets. Farmers used the markets at the beginning, but failed to make their wares attractive, and hucksters—both American and Chinese—realizing that the housewife prefers a neat package and clean vegetables, have succeeded in driving the farmer out of the selling market.

Springfield, Mass.

The nearest approach to a public market in Springfield is what is termed a "market square," owned by a wholesaler of fruits and produce who has invited the farmers to come there and sell their produce, turning their surplus into his hands. The use of the "square" is free. No idea of the success of the plan can yet be expressed, because of its youth.

Syracuse, N. Y.

The city owns the public market of Syracuse, which, in 1911, furnished an income of \$7,987. The annual expense is \$300, the market master receiving \$1,000 a year; of the remainder \$2,100 is applied to salaries and \$600 to supplies and repairs. The structure which goes under the name of the market building is occupied by small storekeepers, who are not allowed to sell the commodities which are sold by the farmers. The latter station themselves in an open square in front of the market building, where a fee of 25 cents is charged for a double team, 15 cents for a single team, and 5 cents for selling from a basket. A charge of 25 cents is made for weighing a load of hay. The market is not sufficiently extensive to interfere with dealers, and has met with no opposition from them. At the present time there is a sentiment in favor of establishing a larger market, but it has not yet grown to such proportions as to induce action.

Tillsonburg, Ont.

There is no public market in Tillsonburg at present. On two or three different occasions a market has been established, but it is believed that the merchants of the city conspired to defeat its success, both by arriving at an early hour and buying all the produce offered and by deliberately under-selling the farmers, who in time became discouraged and ceased to bring their produce to town.

Toledo, Ohio

The public market of Toledo is used almost exclusively by wholesale houses which buy in large quantities direct from the gardeners and truck farmers, hucksters and retail dealers also purchasing to some considerable extent. The market master receives a salary of \$720 a year. In 1911 the total expense of the market amounted to \$2,096, which included the market master's salary and the amounts paid to laborers for cleaning. There are about 200 stalls in the market, erected at a cost of about \$120,000, these stalls being auctioned off at the beginning of the season. A charge of 25 cents per diem is made for every wagon standing outside the private stalls. This market is considered a success, having in 1911 paid the city a profit of several thousand dollars. Plans are now being formed to establish retail markets in Toledo, with the object of obtaining lower prices.

Toronto, Ont.

The city of Toronto owns the public market, which is governed by rules and regulations passed upon by the Municipal Council. The annual expenses are approximately \$10,000, consisting chiefly of salaries. The market is in charge of a foreman, who receives a salary of \$17 per week. No rental is charged to farmers for the use of the market. About 125 farmers display their goods for sale on Saturday, which is the main market day. Commission men and produce dealers are neutral. The market receives shipments from other communities, and prices are regulated according to demand.

Traverse City, Mich.

The public market of Traverse City, Mich., consists of a scale house and a maple tree. The buyers, who are commission men, sit beneath the tree and bargain for the farm products as they are brought to be weighed. There is a master, who receives \$50 a month, while light, caretaker's salary, fuel and telephone run the expense to \$1,035 per year. No licenses or rentals are charged.

Washington, Pa.

Thirty years ago the operation of a public market in Washington was abandoned. During the summer of 1912, an experimental curb market has been operated under the management of the Board of Trade, with the idea of learning if a permanent market is needed. This experiment has been most satisfactorily concluded. The market was so well patronized that real estate men of the city have now leased a large building to be used for this purpose. All the stalls in this new market have been rented for the year at a charge of \$5 each. Up to the time of compiling this article no rules and regulations have been issued, and no market master appointed. The farmers in the vicinity seem highly pleased with the facilities furnished them to assist in the disposition of their produce, and the establishment of the market has been accorded public approval; in fact, it is decidedly popular.

Watertown, N. Y.

A public curb market, on a lot rented by the city, was opened late in the season of 1912. There is no market master as yet and no expense, the rent being merely a nominal sum. Only a few farmers have used the market for displaying their produce, but it is believed that in the spring of 1913 their number will be largely increased and the success of the market assured. This market receives no outside shipments and is favored by the commission men. Prices are lower than those of the retailers, owing to the elimination of the middleman.

Wheeling, W. Va.

A new market house and auditorium combined is being erected in Wheeling and is almost completed. Details as to management, expenses, etc., are not yet obtainable. The old market, in the same location, was for many years a source of small revenue to the city, which owns the ground on which the market stands, the grant from the original owners providing that the land shall be used for no other

purpose. The new market is to be operated by a stock company formed under the Board of Trade, which holds the franchise, and in conjunction with the city of Wheeling.

Wichita, Kan.

Under the commission form of government, Wichita operates a successful public market, which is under the jurisdiction of the Commissioner in charge of public parks, playgrounds and health. The market place is adjacent to the large gathering place known as the Forum, and is 150 x 300 feet in dimensions, paved and temporarily roofed, with a frontage of permanent buildings devoted to offices, restaurants, fruit stalls, etc. The entire space will be permanently enclosed within a short time. It is the intention of the municipality to acquire the entire block in which the Forum and the market place are located, and to use it for additional civic purposes of exposition and fairs of various kinds. The market master receives a salary of \$75 per month. The other expenses of the market are \$4 per month for light, \$8 per month for water, and \$12 per month for garbage removal. There are ten booths for which a rental of \$5 is charged; 250 farmers use the market, which also receives shipments of vegetables and fruit from other communities. The commission men and produce dealers are opposed. Prices are kept down by considering the standpoint of the consumer. This market has been a paying proposition from the beginning.

Zanesville, Ohio

The market of Zanesville is considered a money maker for the town, and plans are being worked out for a new market place. The present one is owned by the city and its rules and regulations are made by city ordinance. Permission is given to truck gardeners to sell direct without peddling, and the rent of the booths or stalls gives the city a substantial revenue. The market master receives a salary of \$720, and the total expenses, including this salary, are estimated at \$1,075, the expense beyond the market master's salary being janitor's service, light, heat and incidentals. The rental charged for booths is \$4.50 per quarter, and there are at the present time 70 booths occupied. Sixty of these booths are used by farmers, who sell their produce direct to the consumer. Commission men are friendly to the market, which does not receive shipments from other communities, but sells only what is locally produced. General market prices govern, and there is no attempt to hold down prices.



Efficiency in City Planning

Some Preliminary Work in Jersey City and Newark, N. J., in Which
Business Principles Have Been Applied to the Science of
City Planning—How the Surveys were Con-
ducted and the Results Presented



THE principles of modern industrial efficiency, of "Taylorizing," are now being applied to city planning. Waste has thereby been greatly reduced by E. P. Goodrich and George B. Ford in their work for the City Planning Commissions of Newark, N. J. (400,000 people) and Jersey City (300,000 people). The aim has been so to standardize the work of investigation and the drawing up of recommendations as to get the most complete and valuable results at the least cost to the community. This system, however, takes full cognizance of the fact that no two cities are alike in their problems, and that the individuality of any community must be preserved. This system does not stereotype.

In Newark and Jersey City the whole field has been covered with a view to omitting no important item of city planning. The relative importance of all the phases of the work has been weighed, and an order of urgency determined upon. This permits each community to carry out the proposals as fast as money is available, without running itself into debt—and, at the same time, to get the most necessary things first.

It was recognized that city planning without a full knowledge of the facts would be absurd. The city planner must in justice to his clients know every part of the city and every phase of its physical life. So in these two cities most thoroughgoing surveys have been made with regard to everything that affects the material welfare of the community: the use of the streets and thoroughfares; the character and condition

of the roadways and sidewalks; the use and condition of transit lines, of transportation of people by the railways and the handling of freight; the handling of food stuffs; the nature and use of the water front; where people lived, how they lived and why they lived as they did; the same with regard to their work, and how they went from the place they lived in to the place where they worked; the life of the people in their homes; the education and recreation of the children; the opportunities and needs for play places and the area served by such; recreation for the grown-ups, including motion picture shows and dance halls; the location and effectiveness of the parks; the use of landscape treatment in the streets and as a setting for public buildings; the treatment of all architectural features for which the public is responsible; the laws that govern the carrying out of these ideas, and the ways and means of paying for improvements and putting them into effect.

Such was the program, and it was all carried along at the same time, so that the proper sense of proportion could be preserved. Great care, however, had to be taken in making these investigations not to be led away from the main issues into doing a lot of work entirely unnecessary in a city planning study.

Sixty-four Miles Covered on Foot

The manner of work was as follows, best illustrated by the case of Jersey City, where the experts were asked to submit first a comprehensive program for city planning work. The experts set out "to know the city." Together with a stenographer they covered on foot every part of the city and the outskirts in a series of fifteen 1-hour to 5-hour tramps, some 64 miles in all. Whenever either of them noticed any feature whatsoever that called for consideration, he dictated a memorandum with regard to it. These memoranda covered in some degree all of the subjects above mentioned.

NOTE.—Mr. E. P. Goodrich is the Consulting Engineer of the Borough of Manhattan, also to the Board of Estimate of New York, and has had to do with all recent engineering improvement work of the city. He is also the designer of the Bush Terminal in Brooklyn, and he is the expert to the Harbor Commission of Los Angeles, Cal.; Portland, Ore., etc.

Geo. B. Ford, A. B., M. S., architecte diplômé par le gouvernement français, member of the American Institute of Architects, is a member of the firm of Geo. B. Post & Sons, architects, City Planning lecturer at Columbia University, U. S. Delegate to the Ninth International Housing Congress in Vienna, and connected with many recreational and housing bodies.

When satisfied that they really did "know the city," the investigators grouped these memoranda under twelve different heads. Then a careful study of each separate subject was made and the main facts were grouped under a general heading called "Data." The main objects and ideals to be striven for, always recognizing the individuality of the city, were then grouped under the head of "Desiderata," and lastly, the methods of getting to work were grouped under the head of "Procedure." This latter head, in each case, contained many suggestions for surveys of different sorts as required by the particular problem. At the beginning of the report was a general chapter which stated in detail the method and principles of work of the experts, what they were striving for and how this particular method of work was the only method of getting at it scientifically. At the close of the report there were a summing up of the facts and recommendations presented under the individual heads and an analysis of the relative importance of the various items, from which was worked out

a logical sequence of urgency. Thus, a comprehensive program was prepared in harmony with which the commission could do just as much or just as little as it desired or could afford in any given year.

In Newark many of these programs have already been carried out in detail. Extensive counts were made of traffic and transit through the streets. Separate counts were taken for electric car, vehicular and pedestrian traffic. Rubber-tired vehicles were differentiated from steel-tired; heavily loaded trucks from light wagons. These counts have been made at all the strategic points in the city, one hundred or more, with as many as thirty or forty men at work at one time. The results were all tabulated and charted according to standardized tables and thus made readily available for use. The same sort of work was done with regard to the laying out of new streets and the rerouting and rescheduling of the trolley cars.

With these figures before them, it was possible for the experts to figure out in dollars and cents the value to the public



PORTION OF FRAME TENEMENT MAP OF NEWARK, N. J.

Each dot represents a frame tenement built within last ten years; the darkest dots indicate the most recent; the heavy lines are fire lines



PORTION OF SMALLER FACTORY MAP OF NEWARK, N. J.

One dot for every 25 workers

in time, interest and wear and tear saved by any recommended improvement. The value of this knowledge was made evident in the case of certain street improvements, which, at first thought, seemed obviously needed, but which proved on examination of the tables to be quite unnecessary; while others that had not been thought of, were shown by the tables to be most urgent. Furthermore, this scientific way of going at it appealed decidedly to the active business man and gave him confidence in the results.

The same principles were applied to the market problem, with a careful survey of the whole question of food supply. Some rather astonishing facts were discovered which caused the experts to recommend the elimination of the present retail city market and to substitute for it a city wholesale auction market, located where the greater part of the food stuffs came in by rail.

With regard to the use of the waterfront, the surveys showed just what the probable use would be for the next fifty years, and served to spoil the dream of many citizens to make Newark a great

ocean port. It did, however, prove the great desirability of the development of a certain definite number of docks in a particular location for lighter and barge traffic.

Housing and Recreation Surveys

The housing survey and investigation, which was most comprehensive, was conducted by Dr. James Ford of Harvard University, with a number of experienced assistants. Large maps of the whole city were made, one showing the height and material of all buildings in the city used for residence purposes; another showing the one-family houses built during each of the last ten years; a similar map for brick tenements, and another one for wooden tenements. These, together with maps showing location of cases of consumption, of typhoid fever and of malaria, and with a splendid set of photographs of typical existing conditions of every sort, presented an accumulation of facts that showed graphically just what and where the weak points were. Thus, every recommendation for relieving congestion or the laying out of new

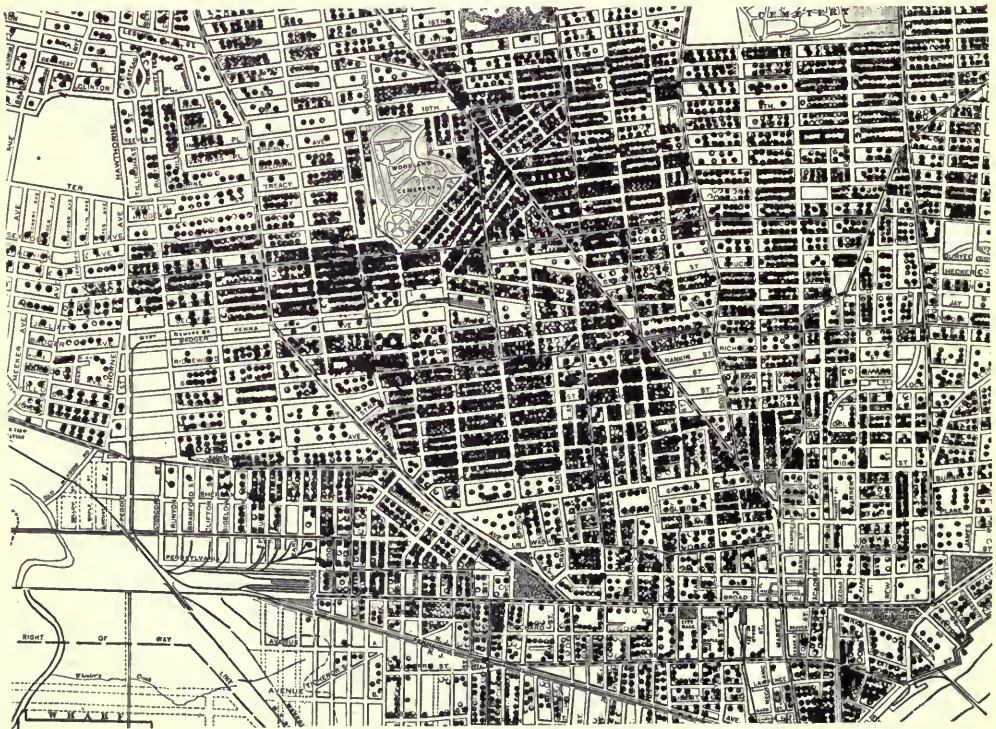
residential districts had a full basis of facts upon which to rest.

The recreation survey—likewise most comprehensive and workmanlike—was in charge of Mr. Seymour Barnard of the Parks and Playgrounds Association of Brooklyn. At three of the typical playgrounds a careful investigation was made as to where each child using the playground lived. These revealed the surprising fact that a very small percentage lived outside of a one-eighth mile radius. Surveys were made as to what the children were doing—whether working or playing or doing nothing—in a number of typical tenement streets, with the result that over half in each case were found to be doing nothing. Surveys were made of street accidents and juvenile delinquency for the whole city over a period of ten years, according to sex, age and month of the year, and they proved most instructive. Surveys were made of all the commercialized amusements and their competition with the city playgrounds was graphically shown; then an extensive survey was made of all city or

semi-public recreational facilities, together with their administration, methods and results. The available areas for each purpose in each case were plotted on a large map of the city. With these results in front of them, it was possible for the experts to work out a practical and comprehensive system for the extension of recreational facilities.

Two maps of the city were made, each 10 feet square. One of them showed by one dot for every five people, or for every family, the exact distribution of the population of the city; the same map showing by difference of color whether the housing was in tenements or dwellings. The other map showed by one dot for every ten people the exact location of the working population, together with a plottage in one color of the area of every factory, in another color of every store, and in another color of every office or financial building. These proved of invaluable assistance in connection with the study of each phase of city planning.

This method of work, systematized,



PORTION OF SMALLER RESIDENCE MAP OF NEWARK, N. J.

One dot for every 25 people



AREA SERVED
BY
PRINCE STREET PLAYGROUND

| | | | | | |
|---|------|-------------|---|-------|-------------|
| • | BOYS | -10 YEARS | ↑ | GIRLS | -10 YEARS |
| + | BOYS | 10-15 YEARS | ↑ | GIRLS | 10-15 YEARS |
| ▲ | BOYS | 15-YEARS | ↑ | GIRLS | 15-YEARS |

A survey of the place of residence of all children at one time in a given playground shows how limited is its area of usefulness

standardized, "Taylorized," as it is, has most decidedly proved its worth. It appeals strongly to the business man, the man who has to pay the bills, and convinces every-

one that the experts have real knowledge on which to base their recommendations, and are not presenting mere dreams, pretty but impracticable.



Does Public Recreation Pay?

What is the Cost?—How it All Comes Back to the People
Many-Fold in Health, Comfort and Efficiency

By Henry S. Curtis, Ph. D.

THESE was a time when taxes were levied to secure the personal gratification of the king, who was not expected to render any particular service in return. But to-day in a democracy the whole tax is supposed to come back to the people. It is either an investment or communal pay for services rendered.

Boards of trade in the different cities are generally working for a low tax rate, with the feeling that a city with a low rate must be an economical city to live in. Yet a glance over the items of any city budget shows that a low tax rate may well mean that the city will be an expensive city to live in. An enormous number of things that were formerly paid for by people individually are now borne in the city budget. Probably all of these have been secured more cheaply through the city than they were by the individual. They have also greatly improved conditions and increased the value of property.

The important question in regard to the tax rate of any city is not how high or low it is, but "What is the city getting for it?" We should avoid always the high tax rate that spells incompetency and corruption, but we should avoid no less the low rate that represents the standards of the Eighteenth Century rather than the Twentieth.

If we endeavor in this way to estimate what the playgrounds are costing the cities or what an adequate system would cost, we shall find that the case is complicated, and the ultimate expense to the city and the people may have no very direct relationship to the playground appropriation. By an adequate system of playgrounds I mean a system that would reach every child, that is open all the year round under trained and competent play leaders by night as well as day, for the working boys and girls and young people as well as the children. It is a system similar to the one maintained by the South Park Board or the West Park Board of Chicago, extended so as to reach all parts of our cities. In all of our considerations, we are estimating that this

adequate system will cost twenty times what our existing systems are costing, or, in other words, that we should be paying approximately a dollar apiece for wholesome all-the-year-round recreation and exercise instead of the five cents which we are now paying.

What Playground Funds Really Pay For

If cities are free to sell or exchange the land they acquire, within a growing city almost any purchase of land at a reasonable price will be a good investment, because the city can borrow the money at a low rate of interest, it will not need to pay taxes, and it thus secures to itself the unearned increment that comes from the growth of the city. For the money spent for playgrounds, the city will have the land, which will be worth as much as the money.

A part of the money that is spent on the maintenance of playgrounds may properly be put down as social insurance. There is a growing feeling of discontent among the workers of the world, a feeling that the worker has not had his just share of the product, that present conditions of poverty, low standards of living and long hours of labor that means nothing to the spirit are unnecessary and unjust. The worker not only feels that he has not had his just share, but he is developing and enlisting leaders for his cause, and he is feeling a new sense of power. We are sitting on the edge of an industrial volcano that might, in almost any decade, rend our commercial world in sunder and bring forth destructive strikes, anarchy, or French Revolutions. The reasons for discontent are not industrial alone. The focus of the whole matter is the difficulty under existing circumstances of leading a life that is worth living. Neither the work of the father in the factory, nor the life of the mother in the tenement, nor the play of the children on the street is satisfying to the spirit, and there has been no provision for public recreation or for a satisfying use of leisure that might feed these growing hungers.

When the people of Rome grew discontented, she built the Circus Maximus and the Coliseum, and offered free spectacles to all. When Cuba rebelled, Spain built municipal theaters in Porto Rico. Doubtless a playground that can furnish safety and exercise and health and fun to the children, and a family resort in the evening, can do much to improve conditions and to quiet discontent. Perhaps the capitalists could afford to maintain the playgrounds for this reason alone.

A part of the playground cost may properly be credited to city advertising and the developing of civic loyalty. When I was in Kansas City last winter, I found that the Chamber of Commerce was raising \$100,000 to advertise the city and its advantages, and most western cities have a larger or smaller fund for this purpose. A commercial body may advertise its city as much as it chooses, but if it is undesirable as a place of residence and business, not many people will come or remain after they have come. The desirability of a city as a place of residence for the family is largely determined by the conditions surrounding children in that city. It will soon be as difficult to sell a house in a city that makes no provision for public recreation as it would be in one that had no public schools. Denver seems to have realized this, and in almost every issue of *The City of Denver*, which is largely a "booster" magazine, there is a section devoted to the playgrounds.

What is the value to a city of the reputation of being progressive and enterprising? What is it worth for its people to feel that it is the best city in the country to live in? There is no answer, of course, but if a system of playgrounds will produce this impression, and it certainly will help, it comes cheap.

In a city of 100,000 people, there are probably 10,000 people who go out of town for two months each summer. If they spend on an average in railroad fares, board, room, etc., \$5 a week, this would amount to \$50,000 dollars a week or \$400,000 in eight weeks that is taken out of the city. Certainly a large part of those who leave town for the summer do so on account of the children. If the city were made pleasanter and more wholesome for them, not so many families would leave the city. Of those who do go to the country, many would not remain away so long. I have known chil-

dren to refuse to go on fresh air excursions, saying that they would rather stay and play in the playgrounds, and I have often known children who had gone away for six weeks to come back after a week in order that they might play on the baseball team or take part in some contest. Certainly the reasons for a child going to the country if he lives near a good playground are much less urgent than they would be if the playground were not there. Of the 80,000 weeks that we have estimated as spent out of the city, at least 10 per cent, or 8,000 weeks, would be saved to the city by furnishing an adequate system of playgrounds. At five dollars a week eight thousand weeks would represent \$40,000 saved to the city. The average city of 100,000 inhabitants is probably spending about \$10,000 on its playgrounds, so this amount, which I believe is much less than the actual saving, would maintain the playgrounds with a comfortable margin. If the city is made attractive the people who come to it are apt to remain there permanently.

The last census gives Chicago 2,185,283 people. These figures mean that for 38 playgrounds, open all the year round for all the city, Chicago is paying less than 25 cents per capita, the price of a half-afternoon spent in a cheap, and probably demoralizing, vaudeville show. What have those centers done for Chicago? They have Americanized grown immigrants more effectively than any other agency. They have given foreigners a loyalty to their adopted country that they did not have before. They have brought the people together and created a community sense. They have reduced by 28 per cent the number of juvenile arrests in their neighborhood, and they have increased by 32 per cent the successful dealing with the children placed on probation.

Prevention of Accident and Crime

A part of the cost of maintaining the playgrounds may properly be credited to the improving of the streets. If posts or boulders were fixed in the thoroughfares at intervals, it would be possible to steer around them without much nervous strain, but it is very difficult to steer around a playing child, because it is impossible to calculate his motions. If we run into a post, we do not injure anything but the vehicle; but if we run over a child we may crush out a human life.

There were 68 children killed while playing in the streets of New York City last year; there were more than 200 who were seriously injured. Children are the greatest obstruction there is to traffic in many crowded quarters. They are putting themselves, their parents, shopmen and all motor men, drivers and chauffeurs under a nervous strain, which we may not realize at the time, but which will surely be recorded in drink and dissipation, in lessened capacity for work, in lessened enjoyment of life, in nervous breakdowns, and in the next generation, in degeneracy. A friend once told me that after driving an automobile through the East Side for an hour after the schools had closed, he was scarcely able to stand, so great had been the nervous strain. The first year that the school playgrounds were opened in New York parents came to me on two or three different occasions and said something like this: "This is the best thing the Board of Education has ever done. Before, we never took any comfort during the summer because we were always looking out of the window to see if the children were safe in the street. Now we send them over to the playground, and we don't worry."

The rapid increase of automobiles is making the streets more dangerous every day. The street department could very nearly afford to maintain the playgrounds for the improvement of the streets.

If we could stop the production of juvenile delinquents, we should probably stop at least 90 per cent of the crime of adults, which costs our country between \$500,000,000 and \$600,000,000 annually. If we may trust the Chicago statistics as to the effect of the playgrounds on juvenile delinquency—and these statistics were very carefully gathered, taking the time of ten investigators for a year, we might expect an adequate and well administered system of playgrounds to prevent or cure about 50 per cent of the juvenile delinquency, and so to save the country about \$250,000,000 annually—a rather tidy sum, which would maintain all the playgrounds in the country for 50 years. But if we suppose that the playgrounds would only reduce delinquency and crime by 10 per cent, which is certainly a moderate estimate, this would still amount to more than \$50,000,000, enough to maintain our existing playgrounds for 10 years. When we consider also the indirect ex-

penses of crime, this estimate is certainly moderate.

Increasing Length and Efficiency of Life

At the time the playgrounds were opened in Washington, D. C., we gave an athletic test for the Standard Button of the Public School Athletic League of New York City. None of the children were able to pass. After four summers of organized play we tried the test again; more than 500 children passed the three requirements, and more than 2,000 children passed one or two of the requirements. Each year we found that the average accomplishment in all our athletic contests was considerably better than it was the year before. It is estimated that from 6,000 to 7,000 school children die each year from tuberculosis. Almost all of these deaths would be prevented if these children were having a proper amount of open air play. Probably as many more deaths at least would be prevented in the same way. All vigorous play develops the heart and lungs, and gives a good digestion, and these give the body most of its resistance against disease. Besides the deaths from disease, the playgrounds will save a large percentage of the deaths from street accidents and drownings from swimming in dangerous places.

If we should say that an adequate system of playgrounds and play that would reach every child through the schools and in other ways would save this country 12,000 lives, a little more than a twentieth of one per cent of the school population, each year, this would seem to be a moderate estimate. If we consider these children are worth to the country \$1,000 apiece, which would not be much of a temptation to the parents, we should again have the tidy sum of \$12,000,000. For every child that dies there are seven or eight that are sick; and the saving in loss of time, doctors' bills, and nursing through better health for these children would be as much more. The person who develops a vigorous physique in childhood will live longer than the one who grows up imperfectly developed and puny. In some cases this may amount to fifty or sixty years; in some cases it will be only a few months; in some cases there will be no gain. It would seem likely that an adequate physical development in childhood would add one year at least to the length of human life.

There are over 17,000,000 children enrolled in the public schools. Considering the parochial schools and the children not in school there are well over 20,000,000 children between the ages of five and fifteen in this country. If an adequate playground system can add a year to the productive activity of 20,000,000 people, this would mean 20,000,000 years of work. If we value these years at only \$300 apiece, this would be \$6,000,000,000. If we credit each of the school years with one-tenth of this amount, this would be \$600,000,000 a year. All through the lives of these 20,000,000 people there would be an increased efficiency due to better health and a good physique. This should add to productive efficiency another increment at least as great as the other. In order to be conservative, we will throw in this and the doctors' bills and the loss of lives with the other and estimate the total saving through physical training and a developed vital resistance at \$600,000,000 a year.

The Rival of the Saloon

Public recreation is the most effective rival of the saloon that has thus far been discovered. If the city furnishes a playground system like the one in Chicago, there is always a place to go to until ten o'clock every night that is physically much more attractive than the saloon. There are beautiful, well-lighted rooms in the field houses where clubs can meet for nothing and where intoxicants cannot be had. In the restaurant of the building are soft drinks and coffee at cost. If a party of young men wish to give a dance, the field house offers a beautiful hall and good music, and it will cost them nothing. If they prefer to have gymnastics or swimming in the evening, the field house furnishes the gymnasium and the swimming pool and the physical director to see that it is worth while. If they wish to have athletics during the day, the playground furnishes the athletic field. The personal standards and touch of the directors influence the boy more or less, and he soon learns that if he would excel in the athletics which are apt to be his greatest interest he must abstain from drink. At the time West Park Playground Number Two was opened in Chicago there were four dance halls within one half-mile of the site. All of these were connected with saloons, and all were vicious influences in the community. With-

in one year all four of these halls had been closed. They had been closed because the young people had discovered that the field house was furnishing a better place to dance, and because it had set up in the minds of these young people new standards of propriety.

Drink is the cause more or less directly of at least half of the crime, of very many industrial accidents, of much of the poverty that robs the next generation, and of the industrial inefficiency that leads to unemployment and low standards of living. If we suppose that an adequate playground system would save only 10 per cent of the cost of drink, conservatively estimated to be \$2,000,000,000 a year (I believe it would save 25 per cent), this would still be \$200,000,000 annually, enough to maintain our present system of playgrounds for forty years, or the adequate system that we have been considering, for two years.

The boy who attends the playgrounds is obliged to discontinue smoking for the time at least. He soon learns that he can not succeed in athletics if he smokes, because it injures his lung capacity. The sentiment created in the playground is against it. Our tobacco bill is \$900,000,000 annually. If one-tenth of this were saved, this would amount to \$90,000,000 a year.

Our present average tax rate is said to be \$15.82 per capita. If this is multiplied by 93,000,000, we shall have a total direct tax of \$1,450,000,000 for the country. Add to this our various indirect taxes for the national government, and we shall have a good \$2,000,000,000 a year in taxation. According to the best statistics that the Playground and Recreation Association of America has been able to gather from the cities, they have spent during the year ending October 31, 1912, \$4,020,121.79 for new sites, buildings, salaries and upkeep of playgrounds. These statistics are incomplete, as a considerable number of expenditures are not reported, but the total is probably less than \$5,000,000. This is only a quarter of one per cent of \$2,000,000,000. Or, to apply it to the individual, out of an annual tax of nearly \$16 per capita we are spending only about 5 cents per capita on public recreation. Now recreation is the the most essentially social and communal activity of which we have any knowledge. We can work by ourselves, or study by ourselves, but we cannot play by ourselves.

We are spending at least \$5 per capita on commercial amusements of very doubtful value. The morality of a people is jeopardized in its amusements far more than it is anywhere else. In the light of our present knowledge, can we consider our present meager expenditure for public recreation as anything less than a public disgrace?

Cost to the Individual

It remains to consider the direct effect of playground expenditures upon the purse of the individual. This will vary with the individual and the section of the city. But it may be worth considering that the fees from one merry-go-round would support two playgrounds, that the playground is much the cheapest institution we have, costing only one to three cents per day for each child. I am inclined to think that the saving in ice creams, sodas, cigarettes and street car rides alone would maintain the playgrounds in most sections of the city. If the city does not provide the playground, the parents must provide more toys and apparatus to amuse the children. They will also take the children on more excursions and to more places of amusement. In some sections a nurse girl will be employed to look after them; and, if this is not the case, the mother must devote much of her time to this care. To me it seems certain that the playground saves the parent directly considerably more than it costs him.

In the recent child welfare exhibit in Kansas City, it was shown that commercial amusements (dance halls, pool-rooms, theaters and an excursion boat on the river) were costing the people of the city more than \$5,000,000 annually. Kansas City is a city of 248,000 inhabitants and an expenditure of \$5,000,000 means \$20 per capita. If Kansas City is typical of the country, we as a people are spending about

\$2,000,000,000 on commercial amusements annually. The Board of Public Welfare for Kansas City estimates that 25 per cent of these amusements are vicious in their influence. It will be noticed that Kansas City is spending for these questionable pleasures 80 times as much per capita as Chicago is spending for the magnificent system of which the city is so justly proud. If one-quarter of the amount that is now spent for commercial amusements were saved through facilities furnished by the city, which is a modest estimate, probably less than the actual saving, this would be \$5 per capita, five times as much as the adequate system that we have outlined would cost. It is also twenty times as much as Chicago is spending, and one hundred times as much as the country at large is spending on public recreation.

In our discussion of this subject thus far, we have considered the playground as a purely economic factor; the value of the joy of childhood, of a normal child's experience, of the difference in the product of the playground and the penitentiary, has not weighed one grain in the scale. Nevertheless, we all realize that the question we have considered is not primarily economic, and that within bounds of a reasonable expense the economic aspects can scarce claim the right to consideration. What is the value of the life of a child? What is it worth to save a man from drowning, or a woman from a burning building? We do not consider finances in questions like these except under stress of bitterest necessity. Play is the central thing about the child. It is the hereditary activity through which he is moulded into the likeness of a man. The child that has ceased to play has ceased to be a child. What is the value of the joy and forgetfulness and comradeship of childish play? It is impiety to ask the question.

Out of the 1,100 communities that reported to the Playground and Recreation Association for the year ending October 31, 1912, as shown in its 1912 Year Book, 285 cities maintain supervised playgrounds. In 49 cities there are playgrounds with no other supervision than that of caretakers. In 9 other cities volunteers look after the use of the playgrounds, and in 130 cities there are school playgrounds supervised by the regular school teachers during the day. There are other places in which the playground movement is under way and which help to make up a total of 533 cities that are reported as giving attention to public recreation. In 43 cities new playgrounds were opened for the first time last year.—THE EDITORS

WHAT TO DO AND HOW TO DO IT

A Series of Twelve Articles to Run through 1913, of Which This is No. 2

How to Work for Charter Reform

By Richard S. Childs

Secretary, the National Short Ballot Organization

IF you are a Chamber of Commerce or a Taxpayers' Association, your motive in working toward charter reform is likely to be a desire for "good government."

Frankly, you will have to abandon that attitude!

For you cannot make a charter which will automatically bring about good government, and you ought not to try. Forget the "good government" idea, and go after *popular government* as distinguished from politician's government.

It is easily possible to contrive a representative mechanism which will automatically produce whatever kind of government the people want. As the mechanism of government can be made so that it will baffle and block the will of the electorate, so also it can be made extremely sensitive to public control, and your elective officials can be put in an environment that will make them very nervous about public opinion.

Now, it may be that the people of your city are not as all-knowing as you are, and are liable to make mistakes if given a really workable form of democracy. But you, as business men, can better afford to take your chances with the people than with the politicians. There may be difficulties in explaining some complicated need to the thousands of voters, but the certainty that you will get an honest verdict overshadows that difficulty. Your plan, therefore, should be to get a government that will be tremendously afraid of not pleasing the people and serenely indifferent to the wants of that little ruling class known as the politicians.

If there is any man in your town whom folks point to as the boss, then your city is not a democracy. To get rid of bossism, whether it be vested in a single man or in a group of political insiders, you must pro-

vide as substitutes the people themselves. Of course, a system of politics that is designed to be run entirely by the great unwieldy mass of citizenship must be primitively simple. For example, if you have in your city and county a long list of elective officers, your politics will be for experts only. Confront the citizen with more names on his ballot than he can keep track of, and you have disfranchised him about as effectively as if you had kept him away from the polls!

In a popular system of city politics, the list of officials to be chosen at one election must not be longer than five places. Experience shows that the average voter will keep track of five sets of candidates fairly well, and his vote will represent an opinion of his own, and not a second-hand opinion passed to him by the politicians in the form of a party emblem. The shorter the ballot, the easier it is for the citizens to control, and the less work there is for the political expert.

Another way in which old-fashioned city charters baffle the people is by breaking up the city government into a number of isolated parts. Instead of one city government, the citizenship finds itself trying to control half a dozen. The mayor is one government, the board of aldermen, or council, is another, the city treasurer is a third, the board of public works is a fourth, etc. They are loosely connected by various devices, but that does not make one government of them all. The result is pulling and hauling, deadlocks and delays; and when the people undertake to control the government, the tangled system refuses to obey and gets away with its disobedience simply because each official has a plausible excuse for laying the blame on the other man. Our tanglefoot charters put public officials

in a very unfair and unhappy position. Responsibility being broken up into several bits, it becomes impossible for the people to judge accurately who is to blame, and they end by damning all their public servants indiscriminately. The good man in office gets little credit, and the bad man gets little blame. The fear that they will not get justice from the people has kept public-spirited men out of public office. The typical old-style city government is like an automobile with a separate motor on every wheel. Each wheel protests that it is going straight and that the others are to blame if the machine goes crookedly down the road.

The first job of reconstruction must be to integrate and unify the machinery of government under a single responsible head. There must be a boss somewhere. If he is not inside the system, the dictates of expediency will create one outside. Seek, therefore, unification in your city government and allow all your elective officials to come together on an equal footing as a single body, thresh out their differences in debate, and then end them all by the simple expedient of taking a vote, whereupon arguments cease and action begins.

Analyze almost any trouble that arises in your city government and you will find that it traces back either to a lack of a short ballot or a lack of "unification of powers."

The line of least resistance in charter reform these days is towards securing the commission form of government. This is the one form of city government in sight which has both the short ballot and the unification of powers. In the commission-governed cities, the people elect a single board which, in turn, appoints and controls everybody else. It is a small board and the members of it have power enough to make them conspicuous, and the jobs are big enough to attract able men to fill them.

In your preliminary studies you will soon find that The National Short Ballot Organization, with offices in New York City, is the clearing house for information, and you will get hold of its pamphlets and reports, and will buy, or secure through your library, a copy of "Beard's Digest of Short Ballot Charters," the loose-leaf cyclopedia, in which the charters of all the commission-governed cities are analyzed and interpreted. It makes unnecessary the usual drag-net inquiries sent out to commission-governed cities. Such inquiries, in fact,

are futile nowadays because they have been overworked, and the officials of the commission-governed cities have given up trying to answer them.

The next step is to give to a committee the task of drawing a diagram of your present city government in such fashion as to show its interlacing powers and authorities. This, compared with a diagram of the commission plan, will be an argument that the whole town will appreciate in a moment. You can buy from The National Short Ballot Organization, at cost, pamphlets for popular distribution explanatory of the commission plan and giving the complete story of its development. You can get from the Organization also a mass of material suitable for use in friendly local newspapers.

The drafting of a charter as a basis for discussion is a mere matter of typewriting, when you have so many models of existing charters before you.

As to the initiative, referendum and recall, take them merely as matters of tactics and put them in if you think they will be locally popular, or leave them out if there is a sentiment in your town against them. You needn't be afraid that they will do you any harm, and you will find, in municipal history, no cause to be confident that they will accomplish any striking reform. Their real field of usefulness or danger is the state rather than the city. The short ballot and the unification of powers will make your government so responsive to public opinion that the initiative, referendum and recall become unnecessary.

The propaganda work required for getting your charter enacted into law varies with every city, of course, but you can win your fight if you will heed my first point, that you must work for it as a measure for *popular* government rather than as a measure for *good* government. If you are arguing for something that will reduce taxes and make the government as responsible as a bank, you will excite small support from any save the silk-stocking element of your city. If you put it in the terms of overthrowing a ruling class of politicians and substituting a short ballot form of government, which the people can conveniently understand and control without the aid of the professional politician, you will deserve universal support.



Superior Citizenship

How the City at the Head of the Great Lakes Conducted
a "Welcome Feast" for its New Citizens

By Carl Beck

Director, Civic Center Department, Board of Education



A FOREIGNER once wrote home to his friends in the old country saying, "America is a fine country; not only do they let us vote, but they pay us for voting." American citizenship has long been tainted with indifference and corruption. The immigrant is by no means the only offender. Conditions as revealed in Adams County, Ohio, a few years ago, showed that "blue-blooded" Americans shared considerably in desecrating the ballot. In any municipality where economic and efficient government has not been attained, it will be found that the collective citizenship fails to exercise itself sufficiently and at telling moments.

It is a superior citizenship which seizes every opportunity to exercise public spirit and to instill civic ideals. A practical demonstration of such citizenship was given in the Welcome Feast tendered by the old citizens of Superior, Wisconsin, to its newly naturalized citizens last November.

The idea of welcoming new voters into the citizenship of the city was inaugurated by the social centers some time ago in Rochester, N. Y. The idea appealed to a few spirited men of Superior. Using the social center machinery of the city as a means to carry out this idea of democracy, these men constituted themselves a committee of five and set out to arouse the citi-



AT THE WELCOME FEAST GIVEN TO THE NEWLY NATURALIZED CITIZENS OF
SUPERIOR, WIS.

zenship of the city to its duty. Four score citizens responded. A committee of three spent all day at the court congratulating the successful applicants as they came out of the court room. Words of encouragement were given to those who failed. The same evening a modest banquet was served in the luncheon room of the well-equipped high school. Japanese lanterns hung from the ceiling, American flags were at each plate, a huge one made up the background for the speaker's table; and the banquet itself, prepared in the school by the caterer of the luncheon room, was served by the senior girls of the domestic science department—whose perfect serving was a demonstration to the assembled taxpayers of the utility of this phase of public education. New citizens were present representing thirteen nationalities—Swedish, Norwegian, Finnish, Belgian, Russian, Canadian, English, Irish, Italian, Austrian, German, Danish and Dutch. Old citizens made up of doctors, lawyers, merchants, bankers, city officials, educators and working men sat side by side in the spirit of democracy and goodfellowship with the ore-dock laborer, the coal shoveler and those whom snobs like to call "waps."

This banquet table proved to be a "melting-pot of democracy." The program of speeches was thoroughly representative. The judge who passed the applicants at the court that day acted as toastmaster. The Mayor spoke "Words of Welcome from the City"; the superintendent of schools spoke on "Education and Citizenship"; a U. S. Immigration Inspector talked on the "Duties of Aliens"; the naturalization examiner discoursed, as he was unable to do in the busy court, on "How to Become a Citizen." The president of the local trades and labor assembly spoke on "Labor's Relation to Citizenship." In significant eloquence Congressman I. L. Lenroot concluded the main address of the evening on the "Duties of Citizenship" with these words:

"In conclusion I have just one request to make of you, and that is never for one instant forget that solemn oath you have taken; and

there is another pledge that every citizen, whether foreign or native born, should take, known as the Freeman's Oath: 'I do solemnly bind myself that I will give my vote and suffrage as I shall judge in my own conscience may best conduce to the public weal.' May you never forget that. May you always live up to it. When you go to the polls, when you enter the polling booth, when the curtain closes behind you, when you are alone with yourself and your conscience, in that moment I ask you to stop, each one, and ask yourself upon your conscience this question: 'How can I use this vote of mine for the best interests of my country, my state, my county, my city?' and when you have answered that question I ask you to cast that vote exactly as your conscience tells you is right. If each man will do that, then you will in all years to come be worthy American citizens, worthy of this great country, worthy of that flag which means liberty and law and order wherever it floats. The flag of your native land has been dear to you, it always will be dear to you, but may our flag, the Stars and Stripes, be still dearer, for to-night and in all the years to come it is your flag as well as my flag."

Thus new citizens from foreign lands, at the impressionable time of being naturalized that occurs but once in a lifetime, listened to talks on the meaning, duties and responsibilities of citizenship in the environment of the public school and as a phase of public education under the supervision of the Board of Education. It did the old citizens equally as much good as the new. They were refreshed on the meanings, duties and responsibilities of citizenship on which we are all too apt to become rusty.

The Welcome Feast from a city standpoint did more. The man of the home welcomes with extended hand the guest, the usher of the church stands at the entrance cordially to receive the stranger, the merchant greets you into his place of business. But how often do citizens welcome, usher in, and greet the new citizen, who is not a stranger, who is more than a guest, who comes in not to go out again, but who, after five years of residence, wishes to naturalize and to fraternize and to stay? From a city standpoint it is good business; it is good religion; it is worth-while hospitality to welcome the new citizen. This is superior citizenship.



Protection of Shade Trees

By Harold J. Neale

City Forester, Worcester, Mass.

FEW realize the important relation that the bark bears to the growth of a tree.

Few appreciate the fact that the bark furnishes nature's only protection to the living cells or cambium layer where all the wood of the tree is developed. Because of the need, nature has equipped the trees with ample protection from the elements, according to their various requirements. As the tree matures, the bark thickens and the cambium receives greater protection.

Inasmuch as nature provides against natural causes of injury, we must provide against the unnatural. This has been done for years in one way or another. Park and shade tree commissions, tree wardens and public-spirited citizens have all had a hand in it, and we have along our streets countless trees with wide-spreading branches, beautiful from a distance; but, upon closer inspection, we find ugly wounds on the trunks, where decay has entered and is eating away the heart-wood, making the trees unsightly and even dangerous. Tracing the cause usually leads to the period when no general protection was afforded trees and they were used as hitching posts. Most communities now have laws to protect the trees from this danger. Sometimes, when the laws are violated and the tree injured, the offender is prosecuted; but the injury remains. Even a crude board protection would have saved the tree, but a wire guard would have served the purpose much better. Realizing this fact, the forester of to-day regards the protection phase of his work as important as the planting and care of the tree itself.

Choosing the Guard

There are both advantages and dangers to be considered in the use of tree guards. It is, of course, important that the trunk shall receive plenty of light and air to keep it from becoming damp and thus inducing decay. The trunks should at all times be open for inspection for the fungus and insect troubles which are always in existence. For example, the gypsy and tussock moths will invariably crawl into dark, secluded places to lay their eggs, and if the tree

trunk is protected by a covering of wood or other heavy material, these moths will have a chance to lay their eggs in places which are easily overlooked, and the eggs will hatch before they are discovered. A tree equipped with an open wire or iron guard overcomes this danger.

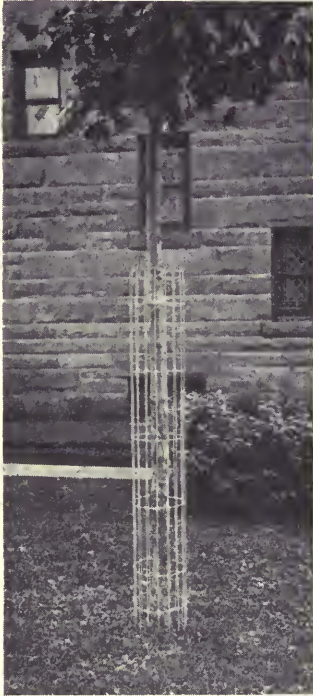
Most of the first guards used were of wood. The appearance of streets lined with trees which are equipped with wooden guards resembles more that of a cemetery than a public thoroughfare. The natural shape of the tree is lost, and much of the beauty of the street is destroyed. The wire type obviates this loss. One of the greatest values of the wire type lies in the fact that the wire in a short time assumes a dark color, usually nearly that of the bark, and becomes lost to the eye, leaving the tree to assume its natural shape. It is for this reason principally that I am personally opposed to fancy ornamental wire, iron or other metallic protectors, and much prefer a close-mesh wire guard which conforms more readily to the color and shape of the tree.

In view of the fact that municipalities see fit to care for their trees in so many different ways, it would be hard to state in general terms anything regarding the universal use of tree guards. Cities that plant and maintain all their street trees with no expense to property owners are naturally in the best position to decide upon the types of tree guards to be used. They are enabled to use a single type throughout one street, thus securing a pleasing uniformity. The city which does not control its street trees is really at the mercy of the property owners in this matter, and in such cases it is not an uncommon sight to find several different types of guards on the same street, many of which are in bad and even dangerous condition. This, of course, is due to the fact that the property owners either purchase or make guards within their means, or satisfy their personal whims about the kind they choose. While in such cases the tree may be fully protected, the esthetic appearance of the street is greatly injured.

Some Good Tree Guards

The plates accompanying this article represent types of wire guards which have been used in this section of the country. The "Excelsior Regular Style" tree guard is six feet high and has horizontal wires number nine gauge and vertical wires number eight gauge, the mesh being two inches by twelve inches. These guards fasten around the tree by means of hooks and eyes, and a coil spring can be attached around the trunk of the tree, which will prevent the guard from rubbing and injuring the bark.

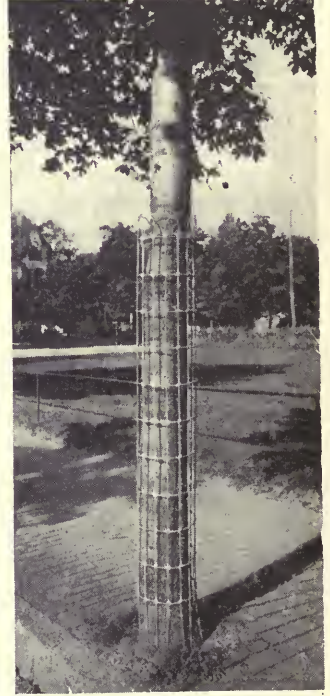
vage edges wired together; where only protection from the street side was necessary, a smaller guard has been used and fastened on the trunk with long staples. This appeared very feasible at the beginning, and by using one and one-quarter or one and one-half-inch staples, which were left protruding nearly one-quarter of an inch, the expansion of the trunk was allowed for. There being no uniform growth for all species of trees, many remained so long without inspection that the bark and cambium layer grew completely over the staples



Regular style open-mesh guard surrounding the tree



Open-mesh guard with springs at top



The heavier, stronger, close-mesh guard

This type of guard is strong and ornamental and furnishes good protection. The "Excelsior Close-Mesh" tree guard has wires of the same size, but the mesh is two inches by six inches, thus furnishing more support. It is fastened in the same way as the other type.

For a number of years the city of Worcester, Mass., has been replacing old wooden guards by those of close-mesh wire cloth of about a number seventeen gauge and five-eighths-inch mesh. These have been placed around the trees and the sel-

and the selvage, deeply imbedding them, while the horizontal wires girdled the tree. To remove a guard in such a condition greatly damages the trunk, while to leave them would mean the destruction of the tree.

Realizing this fact, and believing that this type of guard was an advantage from a financial standpoint, the type represented, called the "Reinforced Wire-Cloth Guard," was devised. This type is made by the Wright Wire Company, Worcester, Mass., which has applied for a patent. It has flat

wire woven inside the selvage wires and in the center of the guard. The outer strips have holes punched in them at short intervals, as shown in the illustration. The outer strips are fastened to the tree with large-headed nails, which should be left protruding. The more allowance provided, the longer the guard can be left without danger to the trunk. However, it is believed that should the bark quickly fill the space, the nails can be drawn or cut off without causing injury to the tree, as is the case with staples. A guard so placed on a

poses of a tree guard, is used extensively in Worcester.

It has been my idea to present an outline of the subject in its relation to my own locality. It will be readily seen that various communities treat this subject from different standpoints. The ideal city has wide tree belts on all streets, thus eliminating any need of protection for the trees. Other cities have a few such streets, while some trees may be within the curb line or even projecting out into the traveled way, requiring different kinds of protection. In



Close-mesh type, showing springs at top



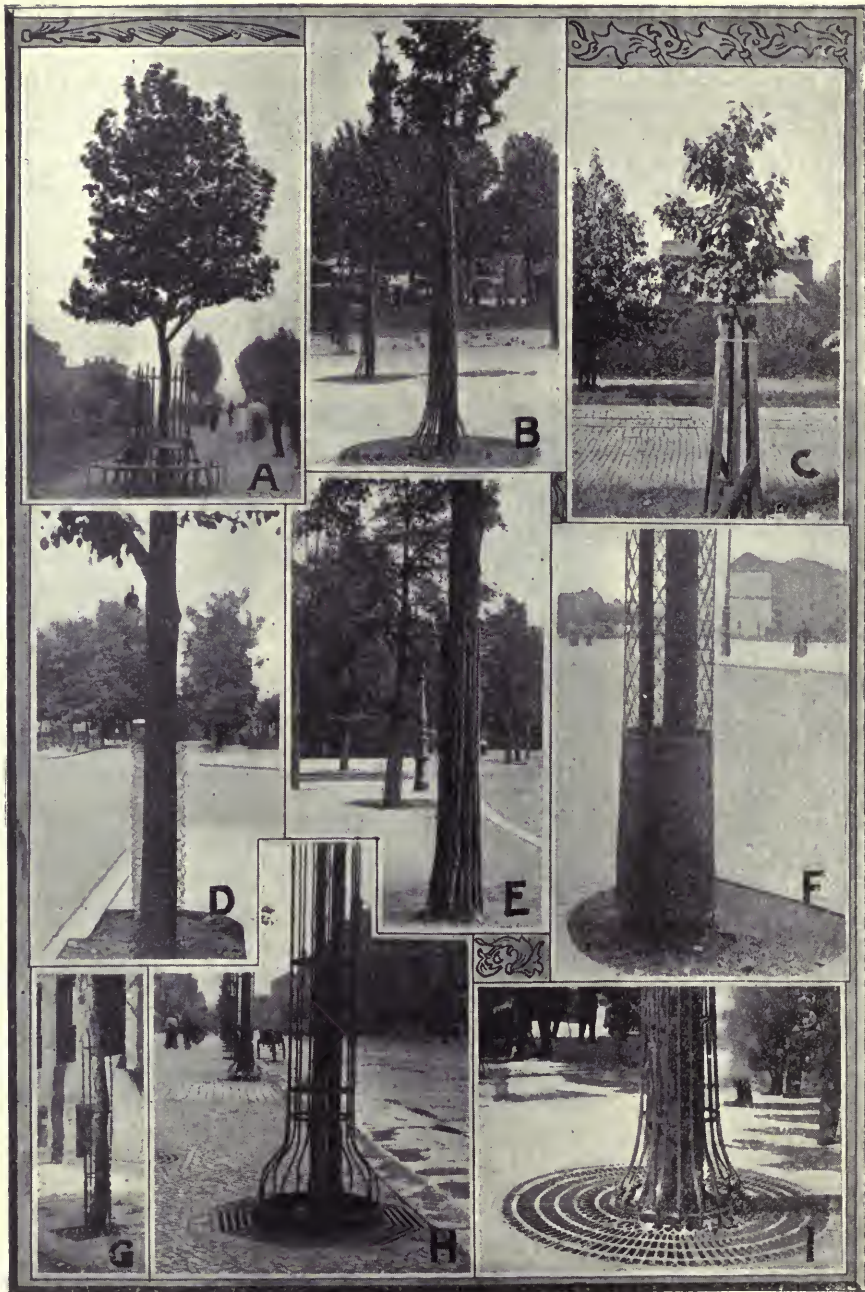
Reinforced wire-cloth guard with center stiffening.



Reinforced wire-cloth guard, showing edge stiffening with nail holes

tree will not be easily pulled off, and can be readily repaired, either on the center or outer reinforcing strip. If one is opposed to nailing the guard to the tree, a heavy coil wire spring can be used to fasten the outer strips together. This will allow for any amount of expansion and will also keep the guard in proper position. This latter type, being inexpensive and fulfilling all the pur-

poses where the tree projects into the street we use a reinforced wire-cloth mesh guard about four feet high, placed out of reach of the hubs of wheels, which are constantly pulling off the longer guards. A strip of sheet iron can be used at the base to protect from injury caused by wheels, and the short wire guards will protect the tree from horses and tops of wagons.



Courtesy of Forest Park Reservation of New Jersey

All but cut G from photographs by Dr. W. A. Merrill of New York Botanic Gardens

SOME OTHER TYPES OF TREE GUARDS

A—Tree guard and bench, London. B—Pole support, wire guard and grating, Paris; enlarged bases of guards in cuts B, H, I, and sheet iron on guard in cut F are to protect the trees from dogs. C—Guard used in Washington, D. C., of wood, with leather bands at top. D—A simple guard of wire netting. E—A guard of pine poles, Berlin. F—Wire guard with sheet-iron base, Frankfort-on-Main. G—Neat iron guard, Trenton, N. J.; too light to last long. H—Wooden support, iron guard and grating, Berlin. I—Older tree, with guard and large grating, Paris.

Treatment of Ornamental or Cultivated Chestnut Trees

By Roy G. Pierce

Tree Surgeon, Pennsylvania Chestnut Tree Blight Commission, Philadelphia, Pa.

A WEALTH of interesting material has appeared in the scientific and popular magazines and in the daily press regarding the chestnut tree blight. Still, in spite of all of the advice and information supplied on the subject, the chestnut trees continue to die. The worst feature of this fact is that the infected trees which have been treated by reputable foresters, pathologists or "tree doctors" have, as a general rule, died, as well as those diseased trees which have not been treated, though perhaps not quite so quickly.

Summed up briefly, the recommendations for eradicating the disease from the trees have been about as follows:

All of the diseased bark or wood must be removed from the tree and burned. The tools, such as gouge, chisel, knife or hand axe, used in this cutting-out work, as well as the cut surface, should be thoroughly sterilized. The wounds after sterilization should be covered with some water-proofing, such as coal tar, white lead, linseed oil and lampblack, or pine-tar, rosin and linseed oil. This is good as far as it goes. The difficulty is that cutting may be carelessly done or that reinfection from the outside may be taking place and may not be noticed soon enough and the infected branch removed or cankers cut out.

If a tree has been nearly girdled at the base by the fungus, it will not pay to work on it. Consider, however, a tree only slightly infected, as, for instance, a forty-foot tree with one small infected branch at the top, one canker at the crotch of a limb and trunk, and one at the base in furrowed bark. Compared with most other chestnut trees in eastern Pennsylvania or near New York City, such a tree with its three diseased places is in fairly good condition, and may possibly be saved.

The Surgeon at Work

The small branch at the top should be cut off below the point of girdling with a sterilized knife or saw. All bark should be removed from the diseased crotch with a

gouge. The border of the diseased area is quite distinct, but cutting should not stop here with the discolored fan-shaped mycelium, but should be continued beyond the discolored area into healthy bark, at least an inch. Above all other precautions, thorough sterilization of the tools should be made in cutting outside of the diseased area, for if the tool is insufficiently sterilized, spores may be carried on the edge of the gouge or knife, and reinfection may take place. Many of the trees treated have become reinfected at the edge of the cut because the wood beneath the canker was not gouged to a depth of at least five or six annual rings.

Just below the diseased crotch, fasten a bag to catch the diseased bark as it is



DISEASED SPOTS ON CULTIVATED CHESTNUT TREES, CUT OUT, STERILIZED AND PAINTED WITH COAL TAR

gouged out. The dropping of this material down the tree may result in new infections in some crack or fissure or newly-made insect hole. When the material is allowed to fall, it is impossible to collect all of it, for it falls among the leaves and grass or is scattered by the wind. Particles of material left on the ground may be carried back into the tree by insects as they forage for food. Preventing the diseased bark from scattering is much better than collecting only a part of it after it has scattered. Care must be taken to scrape all the infected bark into the bag.

Coal-tar with a mixture of creosote combines a good water-proofing with a fungicide.

The third diseased area at the base of the tree is the most difficult to see, since it is in the thick bark, and the reddish brown pustules are not readily seen except on close examination. Around the tree ample canvas or burlap should be spread so that all material may be collected. The work of gouging is the same as at the crotch. At the base of the tree, insect ravages seem to be very abundant. All of the hiding places of the insects, as well as the diseased area caused by the fungus, should be removed. After covering the wound, a strip of sticky "tangle-foot" placed around the base of the tree will prevent many of the crawling in-



SPRAYING DISEASED CHESTNUT TREES
WITH BORDEAUX MIXTURE

sects from going up the tree, thus reducing the danger of infection from that source.



FITZHENRY-GUPTILL POWER SPRAYER USED IN KENNETT SQUARE, PA.

To Prevent Further Infection

After treating this tree for the three wounds, it may become reinfected through broken branches, or insect wounds or in various other ways. Spraying with Bordeaux mixture of the following formula, viz., four pounds copper sulphate, five pounds lime in fifty gallons of water, has been found fairly efficient in preventing the germination of new spores, after all of the diseased parts have been removed. No commercial spray has proved efficient in killing the blight when it has once entered the bark, for sprays have no power of penetration. The most effectual work is done with a machine powerful enough to reach the top of the highest trees, which obviates the necessity of climbing into trees to spray neighboring ones. The climbing increases the cost and is dangerous to the men and to the health of the trees. Reinfection of chestnut blight has often taken place where the bark of limbs has been wounded by the shoes of the men.

The story of the West Chester (Pa.) farmer who is alleged to have cured chestnut tree blight by an application of sulphate of lime to the soil around the trees, cannot be corroborated by the facts in the case.

So far as investigation has been carried on, no substance has been found which, when put into the ground around a diseased tree, has cured the tree of the disease. Among many substances which have been tried are lime-sulphate, ordinary lime water, nitrate of soda and acid phosphate, muriate of potash and kainite. The Pennsylvania Chestnut Tree Blight Commission has also been experimenting with various substances, but as yet has found nothing which when injected into the tree will cure the blight, or, if painted over the wound, will effectually stop its spread.

Specimens may be sent for identification to the Pennsylvania Chestnut Tree Blight Commission Laboratory, 320 Zoölogy Building, University of Pennsylvania, Philadelphia, Pa.; Dr. Haven B. Metcalf, of the Bureau of Plant Industry, Washington, D. C., or to the various pathologists in connection with the agricultural experiment stations.

Literature on the chestnut blight may be procured from the Pennsylvania Chestnut Tree Blight Commission, Philadelphia, or from the Bureau of Plant Industry, Washington, D. C.

What Is Being Done for Bay City Through its Civic League

TO promote cleanliness, sanitation and beauty in the homes, schools, parks and streets is the object of the Civic League of Bay City, Mich. Its members believe that the man who "can go daily to his work along clean and well-paved streets, past frequent small parks and open spaces adorned with trees, shrubs and grass, can point out to his friend stately public buildings and institutions housing a city government which is honest, intelligent and efficient, that man is going to be devoted to the city's welfare. He is going to praise its greatness at every opportunity, and he is going to impress others with like confidence in its future."

The creation of such a spirit as this is the ultimate aim of the League.

There are 756 members in this organization, and a fair number of these are men.

The dues are small—only fifty cents a year, and great reliance is placed on steady, personal work by members, and on interesting everyone in the community to feel responsibility for the city's success.

To this end ten thousand copies of a booklet giving practical suggestions on "What to Do for Bay City" have been distributed by a house-to-house canvass, and information about the work was thus carried to every home and place of business in the city. This little book tells not only what the League has done, but what others are asked to do to get the benefit of the work and to extend it. There is something compelling about the appeal thus made for coöperation. This is partly because the suggestions are simple, direct, specific and



THE TWOMBLY SCHOOL GARDENS, BAY CITY, MICH.

full of common sense. One of the minor ones is:

"Do not allow purple clematis or other purple flowers to have a red building for a background."

Advice is given on the making and repair of lawns and the watering of plants. There is a table showing the quantities of seed necessary for seeding lawns of various sizes, and there are lists of vines, shrubs, perennials and bulbs, also the names of "Twelve Best Roses for the Amateur." Reports of the League's various departments of work are given.

Playgrounds

In 1910 the playground movement was launched locally by the League's equipping at its own expense one of the public school playgrounds with swings, teeters, jumping standards, quoits, sand piles, etc. The League also employed a playground supervisor during the summer months of two seasons. The attendance was so large and the results were so satisfactory that similar work was done at two other schools. An appeal was then made to the Board of Education to take over the work, and an appropriation of \$50 was made for this purpose.

The Visiting Nurse and the Free Dispensary

This department of the Civic League employs two nurses, who respond to all

calls except those for the care of contagious diseases. They make no visits unless solicited by a member of the family where there is illness, or by the attending physician; otherwise their visits might be an intrusion. The charge for services is whatever one can afford to pay.

The best physicians in the city are in daily attendance at the dispensary, and consultation is free to patients. The average number of patients coming to the dispensary is four per day, but some days there are as many as ten or twelve. This department has also maintained a free bed in the Bay City Hospital, and hopes to maintain one before long in the Mercy Hospital.

The department has taken up the fight against tuberculosis, and has under its care from eight to ten tubercular persons per month. The nurses are striving to teach the people how to care for themselves and to prevent contagion. The League furnishes milk, butter, meat and eggs to these patients. The work is severely handicapped by there being no tuberculosis hospital, and it is planned to secure one. The money for the anti-tuberculosis work is obtained entirely from the sale of Christmas stamps. The visiting nurses and the dispensary are supported wholly by subscriptions, which vary in amount from one dollar to fifty dollars a year.

The Sanitary Committee acts at all times

in coöperation with the Board of Health and urges all citizens to further the work of the Board in every possible way.

The Sewing Circles

The sewing circles were organized to supply garments, bandages, surgical dressings and other articles which are constantly needed by the nurses in their work at the dispensary and among the sick poor. Many patients have insufficient clothing and bedding, and in some cases none at all.

Each sewing circle consists of ten members, with a chairman or director. Every member pledges an annual gift of two garments. These garments are collected by the respective directors on November 1 of each year. Strict account is kept of all garments received, and they are sent to the nurses as the need arises. During 1911 1,334 articles were sent in.

There are several large sewing circles in which the ladies of one ward meet together and sew. Second-hand garments are repaired and remodelled, and many new garments are made. The second-hand garments are distributed by the Charitable Union and the new garments by the nurses. The people who have clothing to give away find that they can put it to excellent use by sending it to one of these busy circles.

Two or three days of each winter have been devoted to making comfortables to be distributed by the Charitable Union and the nurses as needed. As far as possible every church in the city is represented in this work. A group from each church is asked to take charge of a comforter. Each worker is asked to give fifty cents and to bring a lunch in a box, and at noon the boxes are distributed. Tea and coffee are served by the hostess. In some cases more than two comfortables have been finished in an afternoon. Many ladies remain after the work is done, each one paying twenty-five cents for the privilege of playing cards, and the money received is used to buy more material for the work.

The Out-of-Door Committee

This committee has, through the kindly assistance of the local press, aroused an interest in gardening and in beautifying home and public grounds. Sixty-odd letters were written in January, 1912, to ministers, teachers, labor unions, real estate dealers,

manufacturers, clubs and individuals, asking their help and coöperation in cultivating the city's vacant lots. The result was gratifying and surprising. Vacant lots which for years had been weed-grown patches were transformed into gardens. The reports show that the work was a good investment financially, to say nothing of the improvement in the appearance of the city. The gardening work for 1913 is being planned with enthusiasm.

The Auxiliary

There is an auxiliary to the League, made up of energetic and capable young women, whose efficient aid rendered to every branch of the work has been of the greatest possible encouragement. The auxiliary has done fine work at Christmas time in remembering poor children with gifts, and has given a number of successful entertainments.

The Junior Department

The aim of this department is to interest children in everything that pertains to the welfare of the city. Without the help of the children the work of the Civic League would amount to very little. Since the teachers are a source of powerful influence with the children it will be readily seen that the foundation of the League work rests upon their good will and assistance. The Civic League coöperates in their efforts to instill principles of honor and patriotism.

The Junior Department offers prizes for the best essays written by children of the eighth grade on subjects chosen with the idea of stimulating a special interest in Michigan and in good citizenship. The prizes are gold pins bearing the inscription of the Civic League and the state flower, apple blossom, in pink and white enamel. The year, the name of the winner of the prize, and a statement of what it is given for, are engraved on the back of the pin.

The Junior Department is trying to awaken the mothers of Bay City to the importance of coöperating with the School Board and the teachers, and of electing the right men to the Board.

A very successful garden contest was held in September. Flowers, fruits, vegetables, all the result of the children's work, made an exhibit not surpassed by the county fair.

ENGINEERING IN CITY PLANNING

A Series of Articles, the First of Which Appeared in *THE AMERICAN CITY* for January, 1913*

Electric Lighting, Police and Fire Alarms

Some Criticisms of American Practice, Based on Experiences in German Cities

By Frank Koester

Consulting Civic Engineer

A CITY may be said to have two individualities, or to produce two impressions: that created by its appearance during the day and that by its appearance at night. The latter is likely to be the more picturesque, and it is not infrequently the impression by which the city is best known. For this reason, as well as

for the convenience and safety of its citizens, it is the duty of a city to have its lighting system planned with as much care and attention as is devoted to any other phase of its design.

Lamp posts, while a necessity, offer at the same time opportunities for decorative treatment, and they may thus be made to serve as an embellishment to the city, both by day and by night. Wiring, however,

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UNTER DEN LINDEN, ILLUMINATED, AS SEEN FROM THE SCHLOSS BRIDGE



OPEN ARC ILLUMINATION IN BERLIN
Lamps arranged to show buildings to best advantage

should, wherever possible, be carried underground.

In Germany the best practice in street illumination is to have powerful flaming arc lamps swung at some height, rather than to have more numerous and smaller lamps placed at a lower elevation. Although the tungsten lamp was originated and developed in Germany, it is very little used for street lighting in that country. Very few American streets would pass muster as to illumination in Germany, and it should therefore be the duty of American lighting engineers to study the factors which have made for success there.

As will be seen by the accompanying illustrations, most effective results are obtained by lamps placed high. The basic reason for so placing the lamps is to secure the most uniform distribution of light possible. The sun, a single light, furnishes the best object lesson in even distribution of light, and could a city be lit by a single lamp the result would be the most nearly ideal obtainable. Such a lamp would, of course, need to be hung at a great height and be of great power. From a commercial

point of view it would not be economical, and the problem which confronts the lighting engineer is to proportion the height and power of the lamp so as to secure the most economical, effective and uniform distribution of light.

In Germany, where electric illumination has been for years a highly developed science, the fact has long been established beyond question, that the best results are obtained with arc lamps placed from thirty to sixty feet in height, according to their illuminating power. A directly contrary practice is much in vogue in America, that in which electroliers with from three to five tungsten lamps, at a height of from thirteen to sixteen feet, are placed at intervals of from thirty to sixty feet. This is a costly method of lighting, and one which is injurious to the eyes on account of the unequal distribution of light, the pedestrian being more or less blinded in the immediate vicinity of the light with contraction of the pupils, while a few steps further the pupils must dilate. This constant alternation produces a fatigue, the cause of which is not understood by the public. In cities abroad,



EFFECTIVE ILLUMINATION AT THE ORANIEN BRIDGE, BERLIN

with streets suitably lighted, the illumination remains unnoticed, being agreeably uniform.

A new form of high-powered arc lamp, placed at less than fifteen feet from the street level, is being introduced in American cities. The light being from a single

point, the bad effects of the tungsten clusters just described are magnified.

However, American lighting engineers are beginning to recognize the value of the principles pointed out, and where they are free to do so, they take advantage of the opportunity to serve the public properly.



ILLUMINATION OF EASTERN END OF THE TIERGARTEN, BERLIN

Showing the Brandenburger Tor at the end of the avenue at the left, and the Sieges Allee (Avenue of Victory) at extreme right, as seen from the Monument of Victory



LIGHTING TOWER AT STEAMER LANDING AT GROEBEN SHORE, BERLIN

The superiority of German street illumination cannot be ascribed to any particularly favorable factors. It is rather a refinement at every possible point. The whole subject is treated in a thorough-going manner and improvements all along the line are adopted. Many well lighted German cities spend less per mile than do American cities, though admittedly better lighted, so that the greater density of population in German cities does not account for the superior illumination. The cost per unit of operation shows also, when compared, that Germany has no special advantages over this country in either cost of keeping lights in operation or cost of carbons.

Among the causes which are to blame for conditions in the United States is that of lack of

uniformity in systems and installations in most of our cities. Along a given street will be found municipal lighting systems supplemented by private lighting of a different character, which produces a jumbled and inartistic effect. Such conditions may arise from lack of power to handle the situation on the part of the municipal officials, laws frequently being required to authorize changes which should be under the control of an administrative officer.

For example, it often happens that a city is bound by law to pay no more than a stipulated amount per annum for each lamp. It is obvious that no company could afford to introduce a lamp costing perhaps twice as much, even if it produces several times as much light, until after some new laws had been passed, usually by aldermen who know little or nothing of the subject. Nevertheless, though slow to gain adoption, the flaming arc and other improved forms are certain, on account of their economy, to make headway and in time to displace units of a lower efficiency in streets in which it



EFFECTIVE ILLUMINATION BY MEANS OF OPEN ARC LAMP
Kaiser Friedrich Monument, Charlottenburg

is desired to have any real degree of illumination.

A further advantage of high swung lamps is that they do not obstruct the streets so much and that they afford a much more effective method of illumination of the architectural features of the city. They are much more desirable, also, in the effect on the eyes, not producing the glare caused by the nearness to the surface of the clustered lamps.

Although it has been held that in some cases the requirements of merchants or the position of trees in residential districts may militate against the use of high lamps, it has nevertheless been found in foreign practice that the high lamp can always be adapted to produce results as good as the low lamp, if not better.

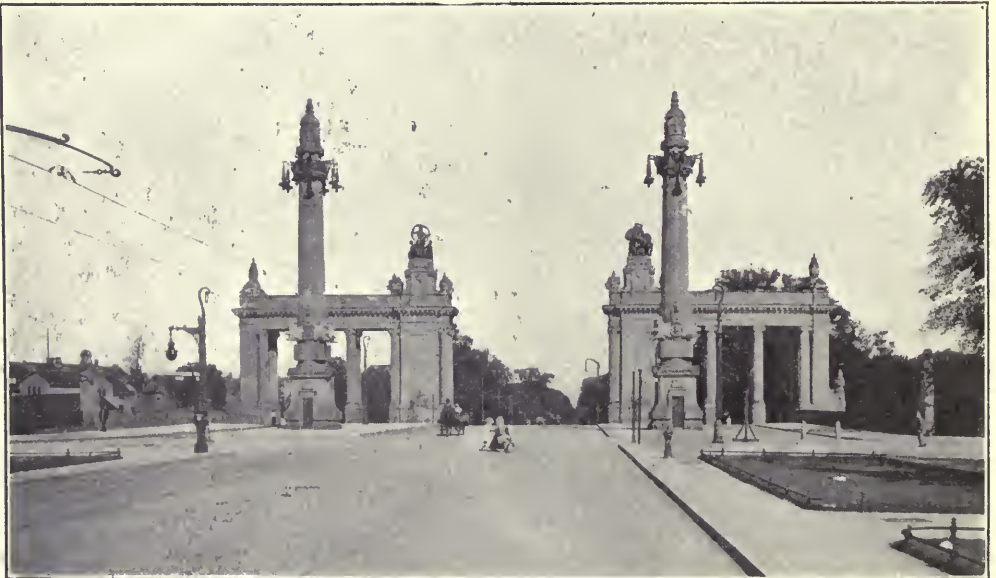
However, if adventitious circumstances necessitate the use of low lamps, ornamental metal standards of graceful design, equipped with tungsten lamps in artistic globes and with the wires underground, are much to be preferred to the ugly wooden poles carrying lamps and overhead wires, or to the festoons of incandescent lights which span the streets of some of our cities. A type of arc lamp which is coming into increasing use in the ornamental lighting system of American cities, and which appears to possess a high degree of effi-



FIRE ALARM SIGNAL BOX AND LAMP

ciency, is the magnetite, or so-called Luminous Arc.

In European cities, a strong rival of electric illumination is the high candle-power



MONUMENTAL ELECTRIC LIGHT COLUMNS AT THE CHARLOTTENBURG BRIDGE PORTALS

gas lamp, and in many cities which operate their own gas plants and where the electric concerns are privately owned, it is found expedient to use the gas lamps. These are built for special purposes up to 5,000 candle-power per unit for high-pressure gas, and up to 3,000 candle-power for low-pressure gas, while the usual electric flaming arc is only about 2,000 candle-power. In the city of Berlin gas lamps are much used, as the city owns its own gas plants. In some of the mains a pressure of 17 pounds is maintained. In New York City the highest specified pressure is 1.16 ounces.

In many foreign cities both gas and electric lamps are lighted and extinguished from a central control, and in addition in the electric lighting systems, if a lamp is out of commission, the fact is automatically indicated in the central station.

Police and Fire Alarm Systems

In the matter of police and fire alarm systems, as in their lighting systems, most American cities are behind the times. It would almost seem that the subject of wiring in all its forms had been neglected by engineers as being a subject more properly within the province of the bell-hanger. This attitude is proving a costly one, and the subject should receive the attention which it deserves.

For purposes of fire and police protection, the German cities have an elaborate and well organized signalling system. Fire alarm boxes are placed in conspicuous positions on ornamental posts, which carry, some fifteen feet above the sidewalk, large red globes; these, being constantly lighted, serve to indicate the locations of the boxes.

The police alarm system, which is excellently worked out, employs as one of its principal features a signalling light similar to the fire alarm light, except that it is green in color instead of red. The city is divided into beats, each provided with several of the green signal lamps and alarm boxes.

Householders are provided with keys to the alarm boxes, and when a policeman is required the citizen unlocks the alarm box, which causes all the green lights on the beat to show. At the same time the citizen talks to the central station over the tele-

phone in the box, and leaves information as to where the policeman is wanted. The policeman, on seeing the green light burning, immediately goes to the box, from which he gets the information given by the citizen and his instructions. Should he report to the box from which the citizen is calling he, of course, gets the information at first hand.

The system is also utilized whenever the central station has any instructions to convey to the police on duty, and it may readily be utilized to collect a large force of men on short notice at any desired point. It serves in addition to keep tabs on the policeman on duty, while the individual officer himself may in the same manner summon assistance when it is necessary. Another advantage of the system is that a smaller number of police can be employed for a given service and quicker service secured.

In addition to the lighting of the green light a bell is also rung, which is of special use during the day, or when the officer is within hearing distance but does not have his eyes on the green light, for the ear is always on guard though the eye be otherwise employed.

The citizen's key cannot be withdrawn from the box after he uses it, until an inner lock of the box is opened by the policeman. As the keys are numbered, any misuse of them is readily detected and properly punished and the key forfeited.

The same methods are applied to the fire alarm signalling, as by means of the telephone the fire department can be informed of the exact location of the fire, and thus be saved valuable time in not having first to go to the fire alarm box and then to search further for the fire.

In American fire departments the system of fire alarm often depends on a single center of distribution for a whole borough or city. It is as though the telephone system were centered at a given point, damage to which would put the whole out of commission. Surely there should always be a distributing system, so arranged with different centers that one or several might be eliminated and still leave means of communication between the remaining centers effective.





TOWN & VILLAGE

The Wonder-Works of a Georgia Women's Club

A New Department in
Which Special Attention
Will Be Given to Municipal
and Civic Problems
in Communities of Less
than 5,000 Inhabitants.

By Edward A. Abbott
Chattanooga, Tenn.

AS the train slowed up at a small town on the road from Atlanta to Chattanooga, a stranger asked me to look out on the right-hand side and "see what some women have done to a Georgia Cracker village."

Looking out, I saw, down by the railroad right-of-way, a charming bit of parking—a narrow green space, two or three blocks long and a block wide. Running in and out among great trees and flowering shrubs

there was a little stream with clean banks and clear water. On its way the brook passes under a stone bridge, alongside some pretty flower beds, and on farther to the Log Cabin, the club house of the local women's club. This object lesson, showing the fine taste and public spirit of the women of Calhoun, lies between the town's business street and the ugly depot. It can be plainly seen from the car window, making the traveler curious to know more about the place



IN THE PARK MADE BY THE WOMEN'S CLUB OF CALHOUN, GA.



THE DRINKING FOUNTAIN ERECTED BY THE CALHOUN WOMAN'S CLUB

and its people. So it is a fine advertisement of Calhoun!

All this and more has been done to a piece of public property which, ten years ago, a local historian said was "an unsightly spot, where weeds run riot and frogs croak contentedly in the slimy ditch water."

Even more remarkable than the little park is the Log Cabin, and still more noteworthy are the women who conceived and executed this and other civic betterments. They wisely said, after the Cabin was built, "It must be a rest room for country women and children, as well as the meeting place for the Club," and this came to pass.

This vine-clad Cabin is set in the midst of an extensive lawn, with roses and shrubbery. It has a spacious rock chimney, and wide verandas, with rough cedar posts. It contains two large rooms, with lavatories, running water and all the things that go to make such a place useful and restful. It is heated in winter, lighted with electricity, has a piano, a library of several hundred books, and reading tables supplied with newspapers and magazines.

A paid matron is at the Cabin during business hours to look after the little children of the country women who come to town to trade at the stores. This beneficent

feature of the Cabin's administration can be best appreciated by those who have "clerked" (as I have) in a country store and seen the painful efforts of a woman to shop with a baby in her arms, while other cross and whining youngsters were pulling at her skirts or racing up and down the store, bent on getting into something out of which they must be dragged or coaxed by the anxious storekeeper or the harried mother. So the Cabin helps business. It pays!

So well has the rest-house proven its right to be, that the Town Council now donates \$60 and the County Commissioner \$50 annually for its upkeep. Getting \$110 a year from town and county officials for such a purpose is not the least of the things done by the 86 members of the Calhoun Woman's Club, of which Mrs. C. C. Harlan is President and Mrs. H. C. Ogden is Corresponding Secretary.

If this little story of a Georgia village's venture in civic uplift induces other public-spirited women to start something, its object will have been attained and its writer will be glad to have done something to help make life in little places more endurable—more useful.

A Village Water Works Operated by Deep Well Pumps

By Floyd Foster

Superintendent Water Works, Yukon, Okla.

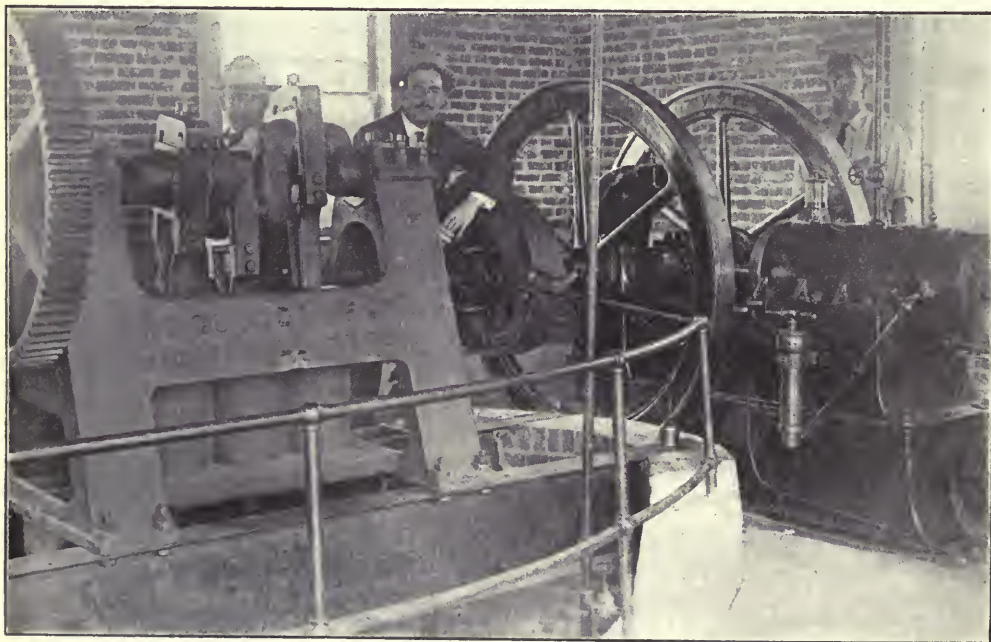
THE water supply of Yukon, Okla., is obtained from a bed of sand and gravel about 30 feet deep. There are six wells now in use, each having a separate pit 16 feet deep, with brick walls laid in cement mortar. As the wells extend 30 feet below the bottom of the pits, their total depth is about 46 feet. The wells are about 50 feet apart, three on each side of the pumping plant.

The wells are connected together with 4- and 6-inch cast iron pipe, and are connected to the suction line by means of 4-inch gate valves. These valves are located in the pits over the wells. The wells are provided with Cook strainers 6 inches in diameter and 6 feet long. Each well can be cut off separately when undergoing repairs.

The entire pumping plant is located in a brick building having an inside measurement of about 24 x 38 feet. Within the building is a pit 16 feet deep and 18 feet in

diameter, with brick walls and a concrete bottom. The pumps extend to the bottom of this pit, on a level with the suction pipe from the wells. The equipment consists of two 8- x 10-inch, 17-foot extension Gould's triplex pumps, each direct-connected by friction clutch to a 30 horsepower Charter gasoline engine. The pumps are of the outside packed plunger type, and have a capacity of 432,000 gallons each in 24 hours.

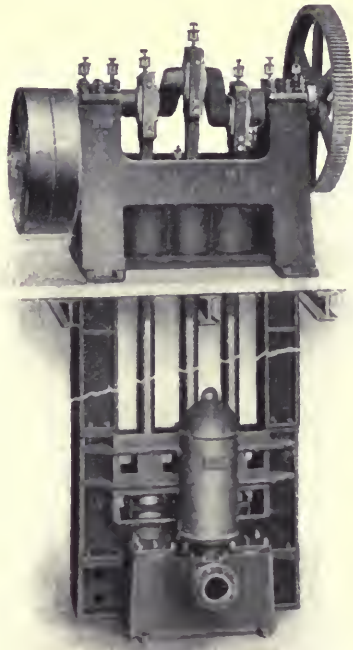
The standpipe holds 50,000 gallons, and is situated on the highest point in the city, about one mile from the pumping plant. The head pumped against is 175 feet, making a pressure of about 85 pounds per square inch. Each discharge pipe from the pumps is equipped with an automatic relief valve. In the event of the main being shut off or there being any sudden pressure this valve opens and the water flows back to the suction pipe.



ONE OF THE WATER WORKS PUMPING UNITS, YUKON, OKLA.

The total population of Yukon is little more than 1,000, and we already have about sixty connections made. Every service is metered, the minimum charge being \$1.00 per month for 2,000 gallons or less, and the rate running as low as 10 or 12 cents per thousand gallons for the larger users. The present revenue is about \$90 per month, an average of \$1.50 per meter.

The operation of this plant has proved to be very satisfactory and economical. The engine consumes about three gallons of naphtha per hour, which, figured at 15½ cents per gallon, makes a



TYPE OF PUMP USED IN THE YUKON
WATER WORKS

fuel cost of 46½ cents per hour. Adding 3½ cents for engine and cylinder oil, the operating cost of the pumps is but 50 cents per hour. As a matter of fact, we have bought naphtha at a considerably lower price than that quoted.

As a result of our experience here, the writer recommends internal combustion engines as prime movers for water works in small towns. Both the cost of machinery and the cost of operation are less than for a steam plant. Only one man is required to operate the equipment in Yukon, whereas two men would be necessary for a steam plant.

To Keep the Garbage Can Closed and in Place

A successful simple device for keeping garbage cans in place was reported in a paper by M. E. Connor, M. D., which was read before the Municipal Health Officers' Section of the American Public Health Association at the Havana meeting, and published in a recent issue of the *American Journal of Public Health*.

The illustration shows the self-closing garbage stand which remedied one phase of insanitary conditions in the early struggles of the Sanitary Department at Colon and Cristobal, where Dr. Connor was Health Officer. The difficulties were, first, to get the inhabitants to put the garbage in the can; and,



SELF-CLOSING GARBAGE CAN

second, to keep the cover on the can and the can right side up. Wet garbage and grease spilled over the ground made excellent fly-breeding material, and horses, dogs and sportive children and laborers succeeded in tipping the cans over often enough to make the untidy condition of camp a continuous menace.

The stands have been in satisfactory use for three years. It will be noted that the garbage can is thus kept off the ground, out of reach of those who would otherwise joy to knock it over; also that the cover, which is hinged, falls back into place without effort on the part of the user of the can.



WATER SUPPLY



The editors are glad to receive photographs and data for possible use in this department from municipal officials, water works superintendents, consulting engineers, manufacturers or others having interesting information on water supply subjects.

Equitable Water Rates the Result of Metering

By Morris Knowles, C. E.

THE water meter is unpopular, but the opposition to its use is largely among those who are uninformed and look upon it as means of restricting their use of water. This is the great error which must be corrected, for in actual practice fully three-quarters of the users in an average community would experience a reduction of their water bill, on the basis of the present charges, without any necessity whatever of curtailing the use of water for the ordinary domestic purposes. The unpopularity of the meter is further increased by the fact that, in most cases, where the installation of meters is undertaken, the wasters, or the one-quarter, are the ones first metered; and as their charge on the meter basis is thus increased over the flat rate basis, owing to their wastefulness, this is at once taken as a criterion for all.

It is a well proven fact that the waste of water is characteristic of a very small part of the population and that this waste is due almost entirely to negligence in having leaky fixtures and to carelessness in leaving them open. Most of the water is thus wasted without being of any benefit to anyone. The meter will aid much in eliminating this loss, for when water is paid for on the basis of quantity, the loss through carelessness reverts entirely to the individual using the water and paying for it, and there is thus created an incentive to have better fixtures and to use more care in closing them after use.

In an investigation some time ago in

Philadelphia, where a district was taking about 222 gallons of water per person per day, only 30 gallons were actually used; and out of 780 appliances inspected, 22 leaked slightly and 32 were turned on continually. Thus 54 appliances, or about 7 per cent, were causing this excessive waste, amounting to 192 gallons per capita per day. In the cities where waste investigations have been carried on, this fact, that the domestic waste is caused by less than one-quarter of the users, has been positively established and great savings have been temporarily realized by a house-to-house inspection and the putting of all fixtures in good repair.

This careless loss, due to leaky fixtures, and to permitting spigots to run, is of great importance to the community at large, especially if water is paid for on a flat rate basis, for then the careful users must bear some part of the cost due to their careless neighbors. Its prevention will, to a certain degree, cut down the supply necessary, and thus the expense of operation.

Results of a Recent Investigation

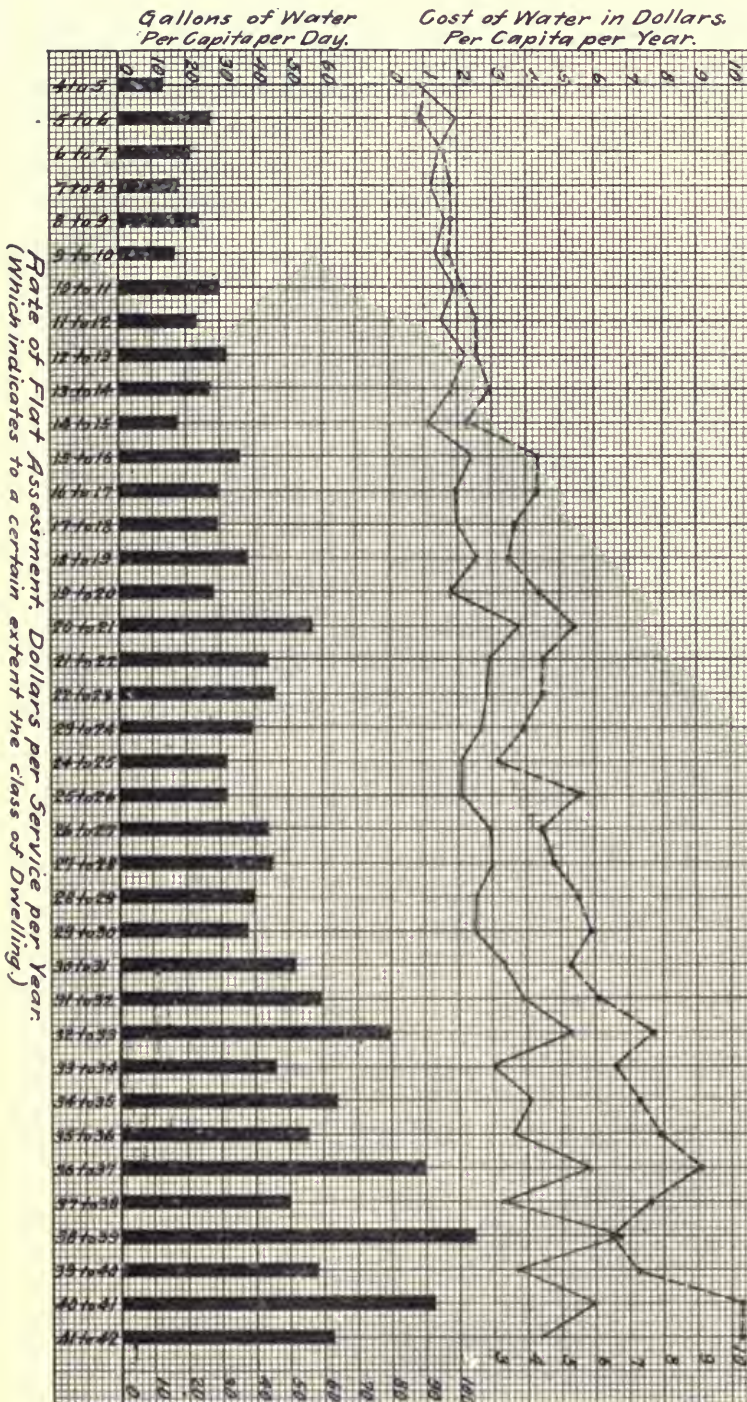
That some of the better informed water users have awakened to this fact, is illustrated by a recent investigation by the writer of the records of 390 water services in a certain large city. All of these were on a meter-pay basis and were supplying residences varying in size from 3 to 20 rooms, and representing all the districts of the city. It was found that 1,931 persons used 25,300,000 of water per year, or about

Diagram illustrating the Use and Cost of Water in an Investigation of 390 Residence Services

The vertical blocks of the lower diagram show the average use per capita per day for the various classes of service.

The curve represented by the solid line indicates the cost per capita per day on the water basis of 18 cents per 1000 gallons.

The curve represented by the dotted line indicates the cost per capita per day on the prevailing flat rate basis.



Proposal Notices

Any city, town or county which places a club subscription for **THE AMERICAN CITY** is entitled to the use of this department without charge for proposal advertisements not exceeding four inches single-column measure. Additional space at reasonable rates. If bids should be asked for at too early a date for insertion in the following issue, send copies of your notice to **THE AMERICAN CITY**, and we will distribute same without charge.

PAVING

Richmond, Va., Jan. 27, 1913.

Sealed proposals will be received at this office until 12 noon, Monday, February 17, 1913, for paving with asphalt blocks on Broad Street from Third to Jefferson Streets (approximate quantity 16,000 square yards).

All bids to be made on form of proposal issued from this office, where specifications can be seen and information obtained.

All proposals must be accompanied with a certified check for \$1,000, made payable to the City Treasurer, as a guaranty of bid.

The Administrative Board reserves the right to reject any or all proposals.

CHAS. E. BOLLING, City Engineer.

COMPLETION OF NORTHEAST BOULEVARD

Department of Public Works, Bureau of Highways and Street Cleaning, Office, 232 City Hall:

Philadelphia, Jan. 23, 1913.

Sealed proposals, endorsed "Bids for The Completion of the Northeast Boulevard," and addressed to the undersigned, at the office above mentioned, will be received until 12 o'clock noon, on Monday, March 3, 1913, for the completion of the Northeast Boulevard, from Second Street to Rhawn Street. Approximate quantities of principal items of work as follows:

402,720 cubic yards grading.
445,700 square yards bituminous macadam surfacing.
69,000 square yards water-bound macadam surfacing.
59,000 square yards vitrified brick gutters on 4-inch concrete foundation.
68,700 lineal feet 8-inch steel protected concrete curb.
49,200 square yards cement sidewalks.
431,800 square yards top soil and grass seeding.

Together with all other work incidental thereto, including sewers, masonry, vitrified pipe, manholes, inlets and trees and shrubs. The amount of money available for the work is \$1,000,000.

A charge of \$10 will be made for each set of specifications and blue prints, which charge will be refunded upon the return on or before March 3, 1913, of the unused specifications and plans in good condition, or upon the return of the plans in case a bid is submitted.

Specifications and blank forms upon which bids must be made, can be obtained upon application at the office of the Bureau of Highways, Room 232, City Hall.

No bid will be considered unless accompanied by a certificate from the City Solicitor that the provisions of an ordinance requiring proposal bonds when the bids exceed in amount five hundred dollars, approved May 25, 1860 (p. 81 West), have been complied with.

The Director reserves to himself the right to reject any or all bids, as he may deem best for the interests of the city.

M. L. COOKE, Director.

WATER METERS

Yazoo City, Miss., Jan. 8, 1913.

The Public Service Commission of Yazoo City, Miss., will receive bids for water meters for the ensuing year until February 15, 1913, at 3 o'clock P. M., when they will be publicly opened.

Companies wishing to do so may send one or two $\frac{3}{4}$ -inch meters to the Commission for examination and test, provided there be no expense to the Commission for said meters.

The contract letting will be influenced by price, accuracy and mechanical excellence of the meters offered, and any other feature that may later present itself.

The right is reserved to reject any or all bids without question. Specifications may be had by application to the Commission.

JAS. S. BUTLER, Superintendent, Yazoo City, Miss.

REINFORCED CONCRETE RESERVOIR

Baton Rouge, La.

Sealed bids will be received up to 12 o'clock noon, February 20, 1913, by the Baton Rouge Water Works Co. for constructing a reinforced concrete water storage reservoir of about one million gallons capacity. Bids will be received first upon reservoir complete, including all material and labor, and, second, with cement, sand, gravel or stone and reinforcement furnished by the water company.

Plans and specifications may be secured by addressing the Baton Rouge Water Works Co., enclosing five dollars (\$5) as deposit to insure their prompt return. The right is reserved to reject any or all bids.

JOHN H. WOOD, Secretary and Manager.

FIRE HOSE

New Brunswick, N. J.

Sealed proposals will be received by the Fire Committee of Common Council of the City of New Brunswick, at the Common Council chambers, No. 380 George Street, in said city, on Monday, February 17, 1913, at 7 o'clock in the evening for the furnishing to said city of twenty-five hundred feet, more or less, of $2\frac{1}{2}$ -inch fire hose, rubber or fabric, in lengths of 50 feet, together with couplings, the lining of hose to be 40 per cent. pure rubber. Hose must be guaranteed to withstand an initial test of 400 pounds and against defects in workmanship and material for three (3) years. The name of the company and brand of hose shall be on hose couplings, stamped in raised letters, with the year and month of purchase, the name of this city, and the weight of 50 feet length; said couplings to weigh $5\frac{1}{2}$ pounds, and said hose to be tested by the committee or the underwriters selected by the committee. The agent's full name and address shall be on the proposal in ink.

Common Council reserves the right to select the brand of hose and to reject any and all bids.

HENRY SEIFFERT, Chairman.
W. CARY NICHOLAS.
WILLIAM MILLER.

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Your
Municipality
or
Your

Board of Trade

arranged as yet for a club of subscriptions for

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Special rates for clubs of from five to one hundred subscriptions furnished on application.

35 gallons per person per day, while the average per capita draft for the entire city was 236 gallons per capita per day. These 390 services paid \$4,554.71 for the water used, as recorded by meter; had they been assessed on the flat rate basis then prevailing, they would have paid \$7,375.07. Thus, by installing meters, these users reduced their water rent 38 per cent. The cost of water on the meter basis was 18 cents per 1,000 gallons; had they used the same quantity of water, but paid for it the sum then being assessed on the flat rate basis, it would have cost them at the rate of 29.1 cents per 1,000 gallons of water.

The accompanying diagram will be of interest as showing the relation between meter rate and flat rate on these 390 services. The diagram exhibits the number of gallons used per person per day, the charge per person per day on the meter basis, and what would have been the charge per person per day on the flat rate basis, for various classes of dwellings. The class of dwellings is shown by what would have been the flat rate, and range from dwellings which would have been assessed at \$4 to \$5 per year, to dwellings which would have been assessed at \$42 to \$43 per year.

The meter charges, of course, follow exactly the per capita use, and the flat rate charge also bears a resemblance to the per capita use; but the latter increases at a greater rate than the meter rate as the class of the dwelling advances.

The first and greatest value of the water meter is to make an equitable distribution of the charges for water for all users. This is illustrated by the diagram, for although it would indicate that in this case there was a well worked-out schedule of flat rates, yet the users in the larger dwellings were paying for water at a rate in excess of the smaller dwellings when measured by the water used.

All Classes of Services Should Be Metered

To carry out this equitable adjustment of water charges, the meter must not be restricted to the domestic user, for there are other services, each of which should contribute its proportionate share. In many municipally-owned plants, there is a tendency to operate the water works as one of several public activities, without any care

to make it self-sustaining, and without apportioning the expense equitably to the four general classes of service common to most water systems. These are:

Supply of water for domestic and household purposes.

Supply of water for manufacturing purposes.

Supply of water for public and charitable purposes.

Supply of water for the service of fire protection.

It is seldom found that the last three classes of service bear their respective proportion of the total revenue, or that proper payment to the water department is made from general taxation, and it is generally the case that the charge for domestic use must bear this extra load. The cost of fire protection can never be measured by the quantity of water used, but it is possible to determine the proportionate cost of this service and thus a fair charge. The water used for manufacturing purposes, and that used for public and charitable purposes can and should be measured and charged for at a determined rate; so that the revenue will contribute its equitable proportion of the total expense of operating the works. The water meter will be of great value on services of the latter type, for the notable places of waste and under-payment for service are the unmetered public and charitable uses. The old saying that "everybody's business is nobody's business" is most apropos in this case. Public fixtures, subject to the very hardest kind of use, are more liable to become leaky and are more apt to be carelessly handled than others, and are therefore likely to become the source of enormous losses, unless there is some incentive, upon the part of the management, to give this detail close attention. In the public use of water, there are many sources of loss and waste, such as the public buildings, the public fountains, the sprinkling and washing of streets; if all of this service is metered and charged to each municipal department, at the same price per 1,000 gallons of water as is charged for other use of like class, the cost of water will be much more equitably distributed.

The importance of this factor is illustrated by the following analysis by the writer of the estimated distribution of use



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Although on the market for about one year the following are among those progressive cities that are creating a real "White Way" by installing this lamp.

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*Ocean Grove, N. J.

*Rochester, N. Y.

*Utica, N. Y.

*Missoula, Mont.

*Negaunee, Mich.

*Already installed.

*Beverly, Mass.

*Buffalo, N. Y.

*Lockport, N. Y.

*Winnipeg, Canada

*Calgary, Canada

*Vancouver, Canada

*Detroit, Mich.

Lynn, Mass.

Newport News, Va.

Dubuque, Iowa

Haverhill, Mass.

Butte, Mont.

Jacksonville, Fla.

Providence, R. I.

(To install 1500)

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Largest Arc Lamp Manufacturer in the World

General Offices:

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3878

and waste in one of the ten large cities of the United States in the year 1910:

| | Gallons | Gallons |
|---|---------|---------|
| Total per capita per day draft, based upon pump displacement.. | | 236 |
| Estimated loss in measuring pump slip | 28 | |
| Estimated loss in reservoir leakage and evaporation | 5 | |
| Estimated loss in mains and services to curb | 47 | 80 |
| Estimated total water furnished for all kinds of use per capita per day..... | | 166 |
| Estimated free use to charity..... | 2 | |
| Estimated use for public and city purposes | 5 | |
| Estimated manufacturing use..... | 38 | 45 |
| Estimated total water actually supplied at curb for domestic purposes, per capita per day | | 111 |

Saving Waste without Curtailing Legitimate Use

The second value of the water meter is, that, in making this equitable adjustment of charges, the one-quarter of the community, who have carelessly and wastefully let the water run and have caused their more careful neighbors to contribute to the payment for such extravagance, will see the error of their ways and repent, thus saving a large quantity of water. It must be borne in mind that such a saving does not mean curtailing the legitimate and necessary use of water. Thirty gallons of water per person per day is ample for the average daily use of any residence community for purely domestic purposes, and fifty gallons may be considered as a maximum.

The effect of this saving will be to make the present investment in the water works answer for a longer period in the future, and thus reduce probable future expenses and charges for water. On the other hand, it will not, as is commonly thought, cause a great immediate reduction in the cost of water; for the consumer must pay the entire fixed charges and the expenses due to the operation and maintenance of the water works. If this cost of providing water has been obtained through the assessment of charges on a flat-rate basis, the total will not be materially changed by changing the method of assessment, for the same amount of money must be raised in either event. The saving in expense, due to the decreased quantity required, will be largely balanced by the additional cost of installing the meters.

No amount of vigilance on the part of

water works officials can accomplish the same results as a meter installation, for the incentive to continual care cannot be created in any other way. In the city of Pittsburgh, with its per capita draft of 236 gallons per day, there existed a district which was particularly noticeable for its large use and waste of water. This district was metered, the method of payment being maintained on a flat-rate basis and the meter being installed for the purpose of detecting waste only and as a guide for the inspector. The experience obtained there was that, after the setting of the meter and with the first inspection, some alarm was caused and the householders took precautions to prevent waste. There was a corresponding drop in the draft and the per capita rate was reduced to less than 100 gallons. Later, this feeling of uneasiness gradually wore off; and as a little relaxation at first was not followed by any reprimand, it was easy to fall back into the old habits, and the per capita rate increased almost to that prevailing before the study was begun.

When leaky fixtures have been once hunted down and repaired, they will remain in good condition only for a time, depending on the quality and the pressure of the water; so that a yearly, or more often a semi-yearly or quarterly, inspection is necessary to cut down this particular source of loss. The habit of letting water run continually from open spigots is of much greater moment and much harder to get at. To stop this by inspection is almost impossible and the cost would be prohibitive. It was common practice in some places in the district above mentioned to allow a spigot to run continually during the summer months in order to keep cool and preserve foodstuffs, and in the winter months to prevent pipes from freezing. The use of water for these purposes may save on the ice-bill or the plumber's bill, and some persons may prefer to use water in this way, but the cost of the water so used should fall on the person reaping the benefit, and not on the three-quarters of the community who pay for their ice and their plumbing in addition to the cost of water they use.

The true function of the meter is to secure just and equitable distribution of the charges for all uses of water, and to protect the careful user from having to pay for the wastefulness of his neighbor or of the municipality in which he lives.

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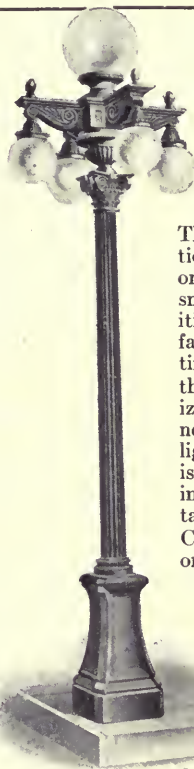
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Relative Advantages of Laying Brick Pavements on Sand Foundations and Cement-Concrete Foundations*

By Robert Hoffman

Chief Engineer, Department of Public Service, Cleveland, Ohio

IN commenting on the relative economy of using a sand or concrete foundation under a brick pavement, the chief items to consider are first cost, maintenance and life.

The city of Cleveland first began to lay brick pavements in 1889 and has continued doing so ever since, until at present there are about 328 miles of streets paved with brick, subdivided as follows:

257.61 miles of 5-inch brick on sand foundation.

19.39 miles of 5-inch brick on concrete foundation.

39.17 miles of 4-inch brick on concrete foundation.

11.84 miles of 4-inch brick on sand foundation.

In considering the relative economy of sand and concrete foundations for brick pavements, experience will show that a properly laid pavement of 5-inch brick on a sand foundation will have a life of at least fifteen years, if laid in residence or light business traffic streets. A 4-inch brick under similar conditions would probably have a life of three or four years less.

The problem is to compare the cost of such a pavement with one laid on a concrete foundation, the actual life of which has not yet been determined by experience.

Referring to the cost data of the Department of Public Service, the following

prices are obtained as the average for the last three years, and therefore expressive of existing conditions:

5-inch brick on natural sand foundation, \$1.27 per square yard.

5-inch brick on 8-inch sand or gravel foundation, \$1.58 per square yard.

4-inch brick on 4-inch concrete foundation, \$1.60 per square yard.

Assuming a fifteen year life for the 5-inch brick pavement on a natural sand foundation, and the interest to be paid as 4 per cent, it will require a payment of 9 per cent per year to pay interest on the cost of paving and to provide a fund for its renewal at the end of fifteen years. This means an annual payment of 9 per cent of \$1.27 or \$0.1143.

In order to compare this with the case of a 4-inch brick pavement laid upon 4 inches of concrete, the same annual payment of \$0.1143 must be assumed. Deducting 4 per cent of \$1.60, the cost of such a pavement, for the interest charge, or \$0.064, leaves \$0.0503 to be applied per year for amortization. This amounts to a little over 3 per cent, and, according to amortization tables, would require a period of twenty-two years to provide the renewal fund.

In other words, the pavement upon the concrete must have a life of twenty-two years in order to be as cheap as the one upon the natural sand, having a life of fifteen years.

Comparing the cost of the 5-inch brick

* From a paper presented at the Cleveland meeting of Section D of the American Association for the Advancement of Science, January, 1918.

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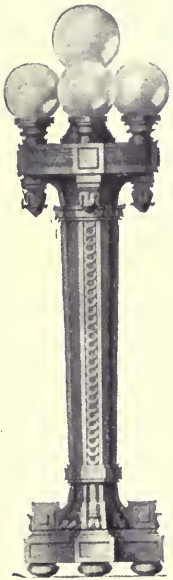
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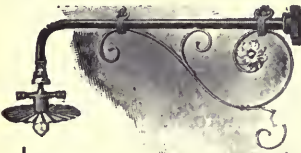
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upon a ballast of 8 inches of sand or gravel with the brick upon 4 inches of concrete, it is readily seen that the difference is so small that both could have the same life at the same cost per year. Evidently, then, the concrete foundation is as cheap as the other, and much more economical, as the probability of longer life is much greater.

A 4-inch brick laid upon a natural sand foundation would cost about \$1.07 per square yard, using the same cost data as used for the 5-inch brick. If such a pavement had a life of twelve years, with money at 4 per cent, it would require an annual payment of about 11 per cent, or \$0.1177.

Comparing this with 4-inch brick on 4 inches of concrete, one sees that the latter would be equally cheap per year, if the life of the pavement were about twenty-one years.

It can similarly be shown that the 5-inch brick would be as cheap as the 4-inch, if the life were three years longer.

Similar calculations will show that a 4-inch brick laid on 6 inches of concrete will be as cheap as 4- or 5-inch brick on the 8-inch sand ballast, if its life is eighteen years.

From this method of reasoning, it may be concluded that, where a natural sandy foundation under good condition is found, it will probably be as economical to lay a brick pavement without a concrete foundation as with one, and the first cost will be considerably less. In other locations, however, where it is necessary to bring upon the work from elsewhere the sand or gravel ballast, the first cost will be nearly as great, and the pavement with the concrete foundation will ultimately prove the more economical.

Several other matters must, however, be given consideration when passing judgment on this question. In Ohio, for instance, the municipality, though paying only a relatively small proportion of the cost of the initial pavement, namely, the part laid in street intersections and 2 per cent of the remaining part, must pay 50 per cent of the expense of relaying any pavement. It is, therefore, decidedly to the advantage of the municipality that a pavement be so laid that its life be as long as possible, so that the relaying expense shall come only at long intervals.

That an unyielding sub-base, such as concrete affords, is highly desirable, goes without question. Such a base should be sup-

plied wherever possible, and in most cases will prove more satisfactory, even at slightly greater cost. Concrete will carry the pavement load over the many soft places caused by street openings prior to paving and will prove a greater factor of safety against the settlements and irregularities which are liable to occur where no concrete is employed. Any settlement in a pavement foundation breaks the bond of the brick and will be rapidly followed by serious deterioration.

Another possible economy in supplying a concrete foundation may be found in the possibility that some time it may be desired to replace brick with other kinds of paving material for which a concrete foundation must be supplied, such as wood block, asphalt or asphaltic concrete, in which event the cost will be materially lessened by reason of the existing concrete.

In open country, with poor drainage facilities, there is no doubt that the damaging effect of frost and the yielding subsoil would soon depreciate any brick pavement with only a natural soil foundation, and concrete is the only safe and economical foundation to use.

The pavements in Cleveland that have lasted so well on sandy foundation, it must be remembered, are on streets supplied with adequate sewerage and drainage, the abutting lots being well built up and graded, so that water easily finds its way to catch-basins and sewers, and all conditions are such that the heaving effect of frost is at a minimum.

Cleveland's greater mileage of brick on sand foundation is explained by the custom of former years. Improved concrete mixers and low cost of cement have made the use of concrete economically possible, where in earlier years the cost would have produced a prohibitive tax upon the abutting property, and, therefore, is now employed to as great an extent as possible.

There is every justification, except in cases of an abnormally high price, in so laying a pavement that it may be durable and serviceable. The interruption to business and traffic by reason of relaying pavements is difficult to value, but nearly always represents a large monetary loss. It is, therefore, entirely justifiable to make allowances in favor of a construction promising a longer life, even though it may not seem theoretically the more economical.

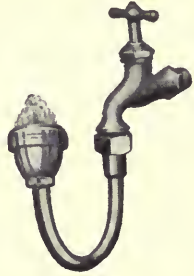
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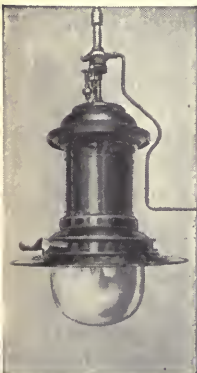
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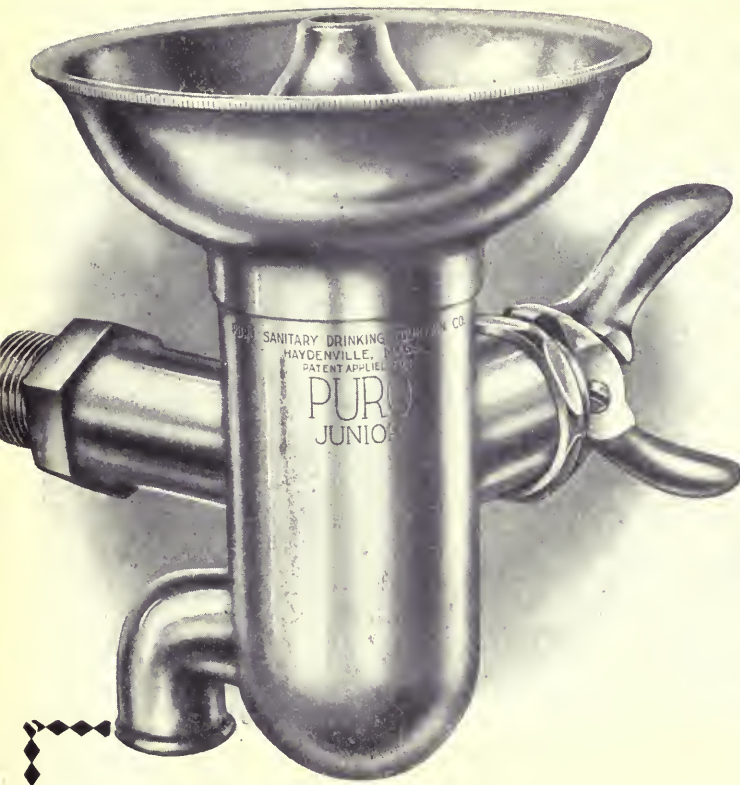


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How Should Road Improvements in Country Districts be Financed?

[EDITOR'S NOTE.—At the recent annual convention of the Alabama Good Roads Association, a paper on "How to Get Good Country Roads" was read by E. B. Gaston, of Fairhope, Ala. As the suggestions there offered have aroused considerable discussion among economists and road builders, the following abstract of Mr. Gaston's paper is published, followed by two comments on the subject received by THE AMERICAN CITY.]

WE have had before us in every city and enterprising town in the state, a method of road improvement by which streets are being paved, curbed, sewered, parked and sidewalked, at an expense of hundreds of dollars for small frontages and to a total of millions upon millions, at the expense of the property benefited by such improvements—and without regard to whether such property was improved or unimproved, occupied or unoccupied, owned at home or by non-residents.

In determining whether such improvements should be made there have been no bond elections, no questions of favoritism as to where or how money raised from the whole people should be expended. For many such improvements the initiative has come not from the authorities, but from the citizens who have had the bills to foot, who have petitioned their councils or boards of public work, to order their streets improved and at their expense.

Why is it that this plan has not been adopted for the improvement of country roads as well as city streets? Can anyone give a reason why it is not as fully applicable in the country as in the city? The principle is exactly the same.

Why should the poor man between 18 and 45, with a living to make and perhaps a family to raise, not only work the road in front of his property—perhaps not his property but occupied as tenant only—and in addition work the road in front of the broad stretches of the non-resident land-owner?

There is no reason whatever, and we will never have good roads through the country, nor deserve them, while we expect him to.

Our statute makers recognized the right

principle and applied it in municipalities when they authorized them to pave, curb, sewer, etc., and charge the cost thereof to the adjacent property to the extent of the "increased value of such lands by reason of the special benefits derived from such improvements." When this is done, nothing that is the result of his enterprise or industry is taken from any land-owner. He is only asked to pay for what is first given to him, and in no case more than its value to him.

Aside from the absolute justice of this plan—and justice should be the first consideration—its advantages are many and obvious.

It substitutes for the ordinary county-bond proposition to be paid out of general revenues, with the certainty of increased taxation and uncertainty of direct benefit to the individual taxpayer, the certainty that the individual will not be taxed unless directly benefited.

It gives the enterprising community opportunity to go ahead and improve its roads without being held back by its unprogressive neighbors, and thus exert the most powerful influence toward general road improvement, the influence of a good example.

It makes the non-resident land-owner do his share toward the improvement of roads which enhance the value of his land as surely as they do that of the resident farmer, who contributes toward every useful activity of the community.

It does away with all temptation to graft, or suspicion of it on the part of taxpayers, in the choice of roads to be improved.

It provides funds for road improvement independent of existing levies and free from constitutional limitations.

Good features of this plan could be indefinitely multiplied. It has no bad ones.

It is new and novel only as applied to country roads, having long been applied in cities and towns. The real novelty is that it has not before been applied outside them.

All its details have been thoroughly worked out for cities, and it can easily be applied to the country, county commissioners exercising the functions of city councils or boards of public works.

The Coleman Boulevard Lamp



1000 Candle Power

A High Power Gasoline Street Light

Brighter than the Electric Arc

It gives a strong, powerful, white light. It is simple, durable and economical. All night service, 5c. per night.

Nothing to wear out or rust out. Made of cast iron, brass, copper and glass. Absolutely storm-proof.

Street lights draw trade and population. They pay the big city, they will pay you. No more dark streets, broken limbs, damage suits, unsightly poles or dangerous wires.

Fully guaranteed and sent to towns and cities on thirty days' free trial.

Write for catalogue and trial order blank.

THE HYDRO CARBON COMPANY
TOLEDO, OHIO WICHITA, KANSAS

It is not my idea that it should take the place of existing statutes providing for the improvement of country roads, but be made supplemental to them—not a plan to be forced onto the counties or lesser communities, but made optional with them.

This would be in line with the growing and genuinely democratic sentiment in favor of local self-government. Let a general law be passed which enterprising counties could avail themselves of if they desired, and leave other counties which were satisfied with existing laws to go on under them.

E. B. GASTON,
Editor *Fairhope Courier*,
Fairhope, Ala.

A Comment by the President of the American Road Builders' Association

To the Editor of *THE AMERICAN CITY*:

The abstract of the paper of Mr. E. B. Gaston, which you have been good enough to send me, contains some timely suggestions concerning the manner of financing road improvements in country districts. While pointing out the right direction, it may go somewhat too far in the suggestion it contains.

The conditions in cities where it is the practice to assess upon the abutting owner the entire cost of street improvements are very different from those which are found in rural districts. In the former case the actual value of the abutting property is so great that the assessment for any ordinary improvement will not be confiscatory. The cost of such an improvement can be immediately added to the selling price, and at least a potential benefit is available at once upon the carrying out of the improvement. In country districts the value of the abutting property varies greatly, and it may be argued that the potential benefit is available in this case also if the abutting owner has the enterprise and the capital to avail himself of it, but there will be many cases where the owner of the abutting property would be totally unable to pay his share of the assessment.

The principle underlying Mr. Gaston's paper is sound—that is, where there is benefit there should in equity be a corresponding assessment, but that assessment should be graduated to the benefit. In the case of the country highway the benefit will

unquestionably vary greatly in different parts of the road, although the cost of the improvement may be the same. To assess upon one abutting owner 10 per cent of the cost and upon another 50 per cent, simply because the latter is able to pay, would be manifestly unfair. It would appear, therefore, that the proportion of the cost to be locally assessed must be determined by the ability of the least valuable property to pay an assessment. It will be impossible to do justice unless the cost is apportioned between the abutting property and one or more of the political units which include it, and possibly all of these units, namely, the town, the county and the state. In this case the local assessment would be levied in accordance with the actual or potential benefit, taking into account ability of the owner to pay. The other contributions would be imposed in accordance with assessed values, which may also represent ability to pay, not for a peculiar local advantage, but for general benefit to the community. If this principle be accepted as sound, there still remains the very difficult problem of an apportionment of the cost between the immediate frontage, the town, the county and the state, and no hard-and-fast rule can be adopted to govern this apportionment.

Space will not permit a further discussion of this most complicated problem, but it is encouraging that in papers such as that of Mr. Gaston the principle of local benefit and corresponding local assessment is recognized as equitable.

NELSON P. LEWIS,
Chief Engineer,
Board of Estimate and Apportionment, City
of New York.

Another Expert Opinion

To the Editor of *THE AMERICAN CITY*:

Theoretically such assessments as Mr. Gaston suggests in his paper, "How to Get Good Country Roads," may be all right. The direct benefit to the farm or forest property traversed by improved country roads, however, is far less than the increased value to city real estate resulting from the paving of city streets. Generally speaking, I believe that the increased marketable value of the abutting property in country districts is very much less than the cost of an adequate highway improvement. The modern narrow country highway is subjected to even heavier traffic



Herewith are shown two men who find a motorcycle indispensable in their public work. On the right is Carl Green, Physical Director of the Y. M. C. A. of Dayton, O., and on the left is Elmer H. Gress, Supervisor of Public Playgrounds for the City of Dayton. It is a significant fact that after trying nearly every make of motorcycle these public servants finally chose and will continue to ride

THE FLYING MERKEL

There is an excellent reason for the popularity of the Flying Merkel Motorcycle in municipal work. The long-stroke full-ball-bearing motor makes the most flexible power plant ever produced for a motorcycle. For 13 years the Flying Merkel has been popularly known as the "everlasting motor." The exclusive spring frame makes it the world's most comfortable motorcycle.

The year 1913 will see more and more Flying Merkels in municipal service. Do you know that the Flying Merkel is the only motorcycle in the world fitted with a Self-Starter and Two-Speed Gear. This feature alone makes it the most efficient motorcycle for police work. Write today for descriptive art catalog just off the press.

The Miami Cycle & Mfg. Co.
520 Hanover Street
MIDDLETOWN, OHIO
MEMBER M.M.A.

per foot of width than 75 per cent of our city streets, and consequently requires as carefully selected and substantial construction as city streets. Such country roads are chiefly used by the public traveling in automobiles from the large cities. The equity of the matter is in favor of the whole public paying such portion of the expense as cannot be practically assessed on the automobile users.

Aside from the equity, I believe that assessments on abutting property would prove to be an extremely slow method of accomplishing the important end of country road improvement on a large scale, because I believe the public is not prepared to meet or countenance such assessments against farm and forest lands.

GEORGE C. WARREN,
Boston, Mass.

FIRE PROTECTION

Fire Losses During 1912

According to the records of the *New York Journal of Commerce*, the year 1912 experienced a smaller fire loss than that of the two preceding years. The first two months of the year witnessed some heavy losses, which are attributed in a measure to severe climatic conditions and prevalent high winds. The losses during the remainder of the year were comparatively light, but a relatively larger proportion of improved and insured property was destroyed than in preceding years. The 1912 fire losses were widely distributed, and while there were no real conflagrations, a number of the fires were very serious on account of the impossibility of holding them within the premises where they started. The largest fires of the year were the one at Houston, Tex., with a loss of \$4,500,000, and the one which destroyed the building of the Equitable Life Assurance Society in New York City and caused a loss of \$3,000,000. There were twenty-eight fires each of which caused a loss of at least half a million dollars. The records of incendiaryism have increased, due perhaps in part to greater efforts to learn the causes of fires. The fire prevention movement has received great impetus during the year, and the annual drain on the country's resources through preventable fires seems likely to be lessened by definite educational methods.

Monthly and Yearly Fire Losses

| | MONTHLY LOSSES | | | YEARLY LOSSES | |
|-----------------|----------------|---------------|---------------|---------------|---------------|
| | 1910 | 1911 | 1912 | 1912..... | \$225,320,900 |
| January | \$15,175,400 | \$21,922,450 | \$35,653,450 | 1911..... | 234,337,250 |
| February ... | 15,489,350 | 16,415,000 | 28,601,650 | 1910..... | 234,470,600 |
| March | 18,465,500 | 31,569,800 | 16,650,850 | 1909..... | 203,649,200 |
| April | 18,091,800 | 17,670,550 | 16,349,400 | 1908..... | 238,562,250 |
| May | 18,823,200 | 21,422,000 | 21,013,950 | 1907..... | 215,671,250 |
| June | 13,183,600 | 20,691,950 | 16,103,450 | 1906..... | 459,710,000 |
| July | 26,847,900 | 25,301,150 | 15,219,100 | 1905..... | 175,193,800 |
| August | 21,570,550 | 12,662,650 | 14,158,800 | 1904..... | 252,554,050 |
| September .. | 11,700,000 | 11,333,250 | 13,779,300 | 1903..... | 156,195,700 |
| October | 37,188,300 | 13,945,000 | 13,651,650 | 1902..... | 149,260,850 |
| November ... | 16,407,000 | 18,680,600 | 16,172,300 | 1901..... | 164,347,450 |
| December ... | 21,528,000 | 22,722,850 | 17,967,000 | 1900..... | 163,362,250 |
| T'ls for y'r. . | \$234,470,600 | \$234,337,250 | \$225,320,900 | 1899..... | 136,773,200 |
| | | | | 1898..... | 119,650,500 |

What Bristol, Conn., says:

Yours of November 19 is received. In reply to same would say that the City of Bristol has purchased and used at the last national election, five Triumph Voting Machines, as manufactured by the Triumph Voting Machine Co., of Pittsfield, Mass. These machines worked out very satisfactory at election, there being no hitch or difficulty of any kind. Many of the voters, also the Mayor and City Council have expressed their approval of the machines. I know of no other City near here, at the present time, who are installing voting machines, but can heartily recommend the Triumph Voting Machine to any town or City who are contemplating the use of voting machines.

Trusting the above is the information desired, I remain,

Yours truly, *Thomas Hall*

TBS-JAA.

TOWN CLERK.

*Is it not
about time
to bring
our voting
methods
up-to-date
?*

The use of the Triumph Machine means Honest, Accurate Voting

Everyone will admit that the perfect voting machine would be a wonderful advance over the paper ballot. But everyone does not know that the ideal machine has now been perfected.

We have prepared an interesting booklet showing in a conclusive way why and how Triumph Voting Machines are the ideal method of registering the vote of a community. If you want to know many important facts about the dangers and inaccuracies of ballot voting and the advantages of the Triumph system, please send us your address, and we will forward the booklet.

**TRIUMPH
VOTING MACHINE CO.**
60 Wall St. New York

What the Triumph Looks Like



More
Money
and
Effort
in
Ways
Like
These



Purchasing efficient automobile apparatus with good tire equipment



Buying well-made fire-hose—and enough of it



Installing or extending fire-alarm systems



Educating the school children and their parents



Employing fire department members as building inspectors



Adopting and enforcing adequate building codes

SHALL WE BURN UP \$200,000,000 AGAIN THIS YEAR?

The average annual fire loss of the United States and Canada for the last ten years has exceeded this sum. Both kinds of expenditures shown on this page come ultimately from the public. *You* are one of the public. How would you prefer to have *your* money spent?

Would
Mean
Fewer
Losses
Such
as
These



Destruction of homes



Business ruin



Loss of public property



Serious accidents



Loss of life



High insurance rates.



Hotchkiss Steel Forms

For sidewalks, street cross-walks, curbs, curb and gutters, drive-ways, pavements, wall forms, fence posts and reinforcements.

What do they accomplish

They have revolutionized this class of construction.

They have eliminated lumber.

They have reduced the labor expense

They secure absolute expansion joints, perfect alignment, true surface.

Equally as advantageous to the small as well as the large contractor.

Write for our special offer for demonstration purposes.

HOTCHKISS LOCK METAL FORM CO.

Dept. A. C., BINGHAMTON, N. Y.

Hotchkiss Fence Post Molds

Cement fence post mold and reinforcements. Complete device for a perfect post. Secures absolute location of reinforcement and corner protection.

Write for descriptive literature.

ROBERT W. HUNT & CO., Engineers

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STRUCTURAL STEEL AND ALL MATERIALS OF CONSTRUCTION

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The Disposal by Incineration of all forms of Municipal, Institutional and Trade Waste

Send for our book, "Disposal of Waste by Fire"

ATKINSON-MORSE DESTRUCTOR CO., 90 West St., New York

KILL WEEDS; DON'T DIG 'EM OUT



Sprinkle Streets, Driveways, Walks, Gutters, etc., with Target Brand Weed Killer, and in 48 hours the weeds will be destroyed, roots and all. One application is sufficient for an entire season

TARGET BRAND WEED KILLER

will not injure marble, cement or any kind of stone, and is strongly endorsed by owners of Estates, Superintendents of Country Clubs, Parks and Cemeteries, as the most efficient weed killer on the market. One barrel diluted will cover 5,000 to 6,500 square yards. Send for folder.

What Other People Say:—"Certainly the best I have used."—J. G. Wallemiscord, Buffalo Burial Ass'n.... "It is quite as effective as other makes and costs less."—W. T. B. Roberts & Son, Glenside.... "I recommend it heartily."—Chas. Murray, Washington University.

Horticultural Chemical Co., 662 Bullitt Bldg., Philadelphia, Pa.

Time and Its Importance in the Fire Department

By Thomas E. Heath

Chief of Fire Department, Saskatoon, Sask.

THE development of fire-fighting as a science has hinged, and still hinges, upon time. The great aim is time saving. When we look back upon the old days, in which the volunteer fire brigade did its services as efficiently as it could under old conditions, and the machines, if they can be termed as such, were hauled over the road by fleet-footed and stalwart men who worked merely for glory and a red shirt, and then take a casual glance at our modern equipment—a casual glance is all that the public gets of our motor equipment on the run—we are tempted almost to believe that the science of combating man's perhaps most dreaded foe has been perfected. Yet this is still a fallacy, for every fireman knows from the contingencies which he meets at each fire he attends that there are no fires alike, and however much we know, there is something yet unknown.

Too much cannot be said for motor equipment, and even this is subject to constant improvement. It is greatly to the credit of modern engineering that, as towns grow into cities, the horse is being replaced. This is great saving in time in many ways. The motor does not get winded and have to stop for a rest. It does not fall and break its legs, and consequently does not have to be shot. The motor is never tired; feed it a little gasoline and oil and it will work

all day without being stabled, fed again and groomed. Then, too, the advance of mechanical agencies in the fire department means better trained men—mechanics all, who know what to do and when to do it by instinct. Our men become skilled in the

use of automatic apparatus, and becoming skilled, they fight fire from the breadth of experience and the expert handling in a time-saving manner of time-saving equipment. I can say upon the authority of my own experience that motor machinery is the greatest time saver in the fire-fighting business, and not only a time saver but a saver of expense. It costs less to operate and maintain than the old equipment, and the possession of a motor fire-fighting system is a guarantee of greater efficiency and effectiveness in those cases of emergency which alone constitute the business of our profession.

Another important item in the saving of time is an up-to-date fire alarm system. In the early days the usual fire alarm system was a bell located in some part of the town or village. The person first seeing the fire rushed to the bell and pulled for dear life to arouse the noble fire-fighters. Later, this was improved upon, by the person sounding the alarm also sounding the number of the ward in which the trouble had originated. Then occurred the rush for the machine, whatever kind it may have

FIRE HORSES WINDED ON HILL.

Had to Stop in Sight of Blaze on Stapleton Heights.

Two houses were totally destroyed and another was damaged early this morning at Stapleton Heights, Staten Island. The fire apparatus had such a long run uphill that the horses had to be stopped and rested in sight of the blaze.

Those who were waiting declared it was more than thirty minutes from the time the alarm was turned in before the first effective stream of water was turned on. There was lack of water pressure on the heights, and it was not until engines responded to a second alarm that effective work was done.

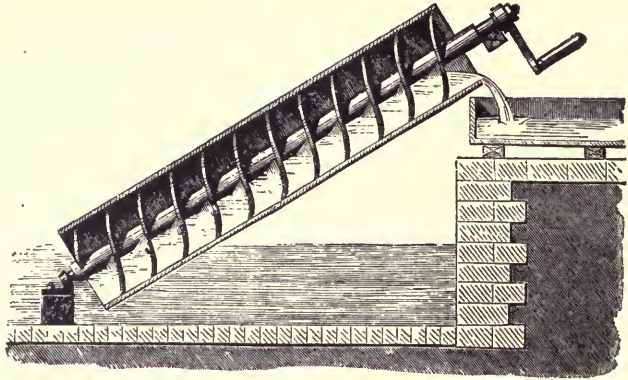
The fire started in Dr. John S. Cosgrove's house on Marlon Avenue at St. Paul's. The doctor and his family had to get out in a hurry. From the Cosgrove residence the flames leaped to that of Charles Harreus, who owned both houses. These two buildings were destroyed, and the loss will amount to \$17,000, it is said. The flames also spread to the house occupied by Dr. Benjamin F. Stanton, principal of Public School No. 17, Richmond. The damage to this building will amount to \$2,500.

N.Y. Evening Post Jan 10, 1913

FIRES DON'T STOP WHEN HORSES DO

The First Pump

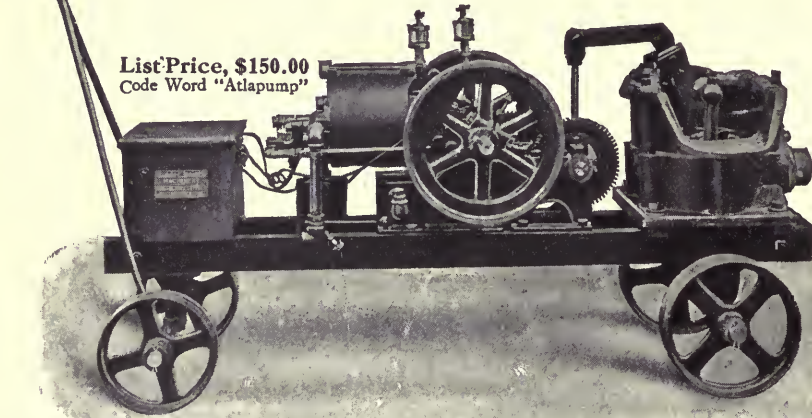
ARCHIMEDES,
the Learned Greek,
Probably Invented
the First Pump Used
for Practical Pur-
poses.



It was constructed about 250 B. C. in the form of a spiral screw and was used for raising the water of the Nile to irrigate the adjoining lands. Little by little pumps have been improved for over 2,000 years, until today you will find the highest efficiency in the

Atlantic Diaphragm Pumping Engine

the pumping outfit that is used by progressive engineers and contractors for pumping out sewers, trenches, excavations, pier foundations, etc. It has for years proved its superiority as a worker and as a time and money saver.



Innumerable testimonials prove conclusively that the Atlantic is overwhelmingly the best gasoline-driven pumping outfit on the market. Ask us for evidence and illustrated circular. It will cost you but a postal card.

Harold L. Bond Company

**383 W Atlantic Ave.
BOSTON**

Manufacturers of Ross Concrete Spade,
Andrews Tamper, Safety Trench Braces,
Felton's Sewer and Conduit Rods, Bond's
Special Suction Hose, etc.

**78 W Beach Street
NEW YORK**

been. The crudity of this method is placed in the background for all time to come nowadays by our several systems of automatic alarm.

Next we come to the question of discipline. A disciplined force at the back of a chief who stands out for rigid discipline at all times may be termed a very momentous factor in time saving and the obviation of unnecessary delays. Let me illustrate my meaning. A force should always be adequate for manning the fire apparatus and getting it under way with the greatest of expedition even at such times as when a certain number of the force are at their meals in daytime.

An adequate force should always be governed by strict rules as to times of meals, various shifts taking their meals at appointed times. Rules should be drawn up by the chief of every fire department, and should be insisted upon with the utmost rigidity. Every man should know the rules by heart, but knowledge is not all, for he should be taught that any laxity will be measured in its seriousness with fitting punishment. Men as a whole are the better for a little discipline, and do not shirk responsibility when it is coming to them.

Having touched upon equipment and discipline, I now come to the question of hydrants and water pressure, and here perhaps I may digress a little also upon the question of hose and of tools. Our nozzles of the present hose equipment have been practically perfected. The shortening of the nozzle and the ready facility with which the hose is attachable to the hydrant, all constitute time savers. Tools of the department should be periodically inspected and kept in the very best condition and cleanliness.

Coming down to hydrants, I think that every chief should use his utmost endeavors to the periodical inspection of these and also towards getting a sufficient number of hydrants along streets, so that you do not have any great distance to go in order to get your line of hose laid to the scene of the fire. Seconds count, time is of more importance than all else in the department, and every factor that will aid in

the saving of time should be attended to. I should like to see a hydrant at the corner of every street and in the middle of every block. You should inspect these and inspect them thoroughly.

Always keep in touch with your fellow city officials in every department. Always keep in touch with what is going on. If streets are being torn up, paving being laid, sewer and water connections, telephone conduits, street railway rails or anything else being installed, keep yourself in touch with it all. Learn the roads upon which you may pass and the roads upon which you may not travel each day as the works proceed. Exercise your authority and do your utmost to prevent any encroachment that might interfere with the progress of your department, its efficiency or speed. Keep in touch with your water situation, always endeavoring to see that you are assured of adequate pressure.

Now a word to citizens. It is surprising to find that many do not even know when their fire insurance policies expire. They should not wait for a fire in their business premises before looking up their policies, but should attend to this very important matter without relying too much upon the assiduity of the insurance agents.

Let us, too, look a little ahead as to where all this time saving is to lead us. A fire department which has attained and maintains a maximum of efficiency is a protection to the citizens as well as to insurance companies, and is also a direct monetary saving to citizens and municipality. Five minutes gained at the commencement of a fire is worth more than an hour after the fire has reached a certain stage. Where you find a fire department equipped with all the latest, most modern and approved fire equipment, alarm systems, machinery, tools, hose apparatus, etc., and with a strong discipline, the whole brought up to a stage of expertness and promptitude, ready for any contingency, you will find that the insurance companies are in duty bound to recognize the advanced stage at which you have arrived and to cut your insurance rates accordingly.



1852
THE MAN WHO KNOWS SAYS *Studebaker*
1912

THE STUDEBAKER LINE

Street Sprinklers, Park and Boulevard Sprinklers, Street Sweepers, Pneumatic Street Flushers, Vehicles for distribution of all kinds of Road Building and Dust Laying Materials, Garbage Wagons and Carts, Asphalt Wagons, Rear Dump Wagons, Bottom Dump Wagons, Bottom Dump Boxes, Street Cleaner's Carts, Oil Tank Wagons. Harness for any vehicle. *Catalogs and Complete Details on request.*



Dump Wagon



Dump Boxes



Street Flushers



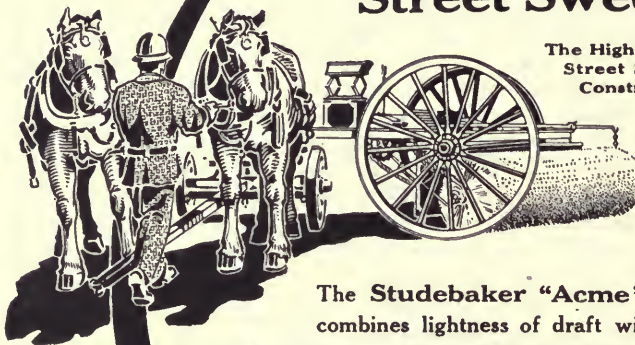
Pressure Distributors



Heater and Distributors



Street Sprinklers



Studebaker
"Acme"
Street Sweepers

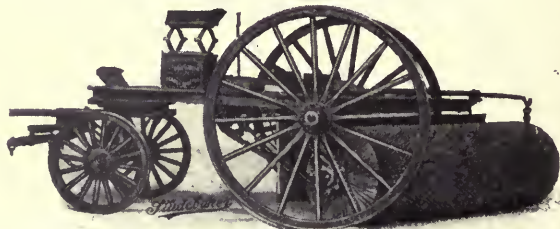
The Highest Type of
Street Sweeper
Construction

The Studebaker "Acme" Sweeper combines lightness of draft with durability, simplicity, ease of operation and efficiency. It is in every respect a superior article and may be relied upon to give the maximum of satisfactory service.

The Studebaker Corporation
South Bend, Ind., U. S. A.

BRANCHES:

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| New York | Chicago |
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| Denver | |



Adv. No. 1627A



Courtesy of Andrew J. Morse & Son, Inc., Boston

FIRE-FIGHTING WITH LARGE STREAMS

A REAL ROLLER

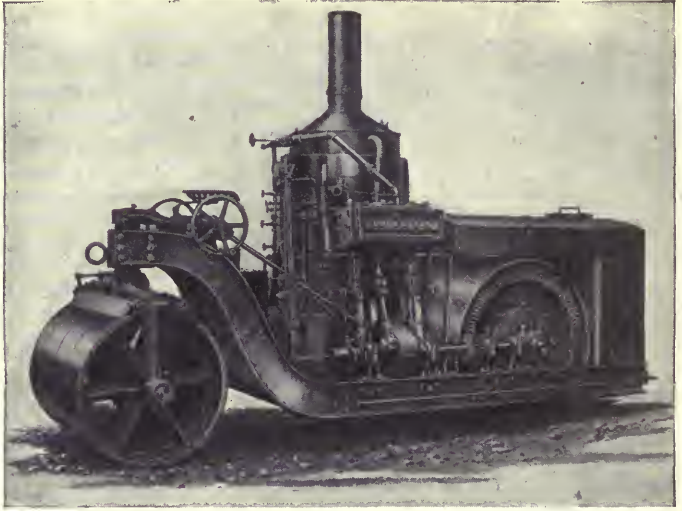
For towns and cities that want serviceable machines

The Monarch Tandem Roller

is better built, develops more power, is more easily operated and controlled, and will last longer than any other roller of this type.

This roller can be used in rolling park and cemetery drives, repairing brick and macadam streets, and in laying asphalt.

No town or city should be without a tandem roller. THE MONARCH is the roller.



The Monarch Tandem Roller.

HANDSOME CATALOGUE ON REQUEST

The Good Roads Machinery Co., Inc., Kennett Sq., Pa.



Road Oiling AND Street Sprinkling

¶ Let us figure with you before you make your contracts this year. There's a saving of money in it for your community.

¶ We have the experience, the apparatus and the determination to handle this work for you in a way which will enable us to hold your business year after year. Why not drop us a line to-day and let us know what you have in mind? Our suggestions will cost you nothing and may open your eyes to some possibilities you had not thought of.

American Car Sprinkler Co.
WORCESTER, MASS.
Specialists on Road Oiling and Street Sprinkling





NEW APPARATUS OF THE DOVER (N. J.) FIRE DEPARTMENT, EQUIPPED WITH FISK TIRES

New Equipment for Dover, N. J.

A fine piece of apparatus, completed last month for the fire department of Dover, N. J., is shown at the top of this page. The truck is of the White type, fitted with electrical self-starter and electric light outfit. The hose body is of steel, with curved sides, with side seats and cushions. There is liberal locker room under the side seats. The hose body has capacity for 1,200 feet of $2\frac{1}{2}$ -inch fire hose, and will carry eight to ten men comfortably.

The fire apparatus equipment consists of one 50-gallon Boyd-Kanawha "air-pressure" chemical tank, with 250 feet of chemical hose.

Before delivery to Dover, this piece of equipment was exhibited at the Commercial Truck Section of the New York Automobile Show, in January, where it attracted much favorable comment.

+ +

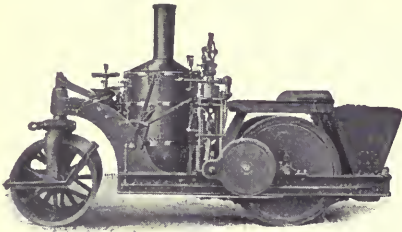
Buffalo's Victor Combination

A six-cylinder 80 horse-power combination hose and chemical truck, recently sold to the city of Buffalo, is shown on page 201. It was built by the Victor Motor Truck Company, of that city, and carries a chemical tank of the "Ever Ready" type.

This chemical equipment consists of a 50-gallon tank mounted on the chassis un-



NOTT FIRE ENGINES, USED BY PATERSON (N. J.) FIRE DEPARTMENT, EQUIPPED WITH GOODRICH WIRELESS TIRES



Buffalo Pitts Double Drive Tandem Roller

Buffalo Pitts Road Rollers

Our patent double drive tandem rollers are especially designed for parks, cemeteries and for rolling all kinds of block and plastic pavements.

Built in all sizes, $2\frac{1}{2}$ to 10 tons. Write for catalogue.

Buffalo Steam Roller Company

Boston

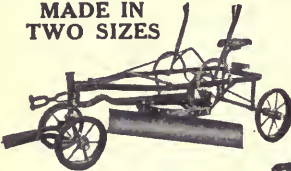
BUFFALO

New York

THE GLIDE GRADER NO. 1 DITCHER NO. 2 LEVELER NO. 3

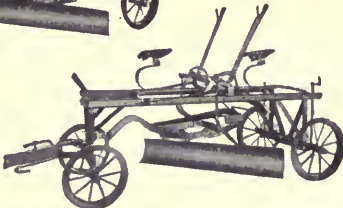
The Best All-Round Road Machine

MADE IN
TWO SIZES



NO. 1
Weight, 650 Pounds
2 Horses
1 Man

NO. 3
Weight, 1,100
Pounds
2 or 4 Horses
1 or 2 Men



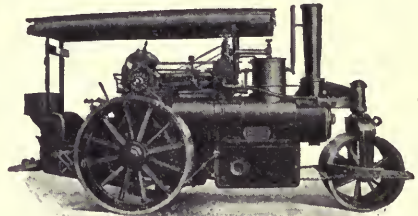
Two strongly built, powerful, light weight Machines that fulfill every requirement for levelling, grading and ditching. Will dig a V-shaped ditch from 20 inches to 36 inches deep. Flanged wheels. Will not skid. Pivot axle. Frame 30 inches from the ground. Direct lever connection with blade permitting instant operation.

FREE Write us to-day for booklet and special good roads matter. **FREE**

GLIDE ROAD MACHINE CO.

509 Huron Street MINNEAPOLIS, MINNESOTA

The ARISTOCRAT OF THE Road Roller World



STANDARD New York--Port Huron Rollers

cost a *little* more but they're *better*.

Designed by the most experienced mechanical talent in this country.

Built of the best materials money will buy. Above statements are true—provable facts.

"The Port Huron Line"

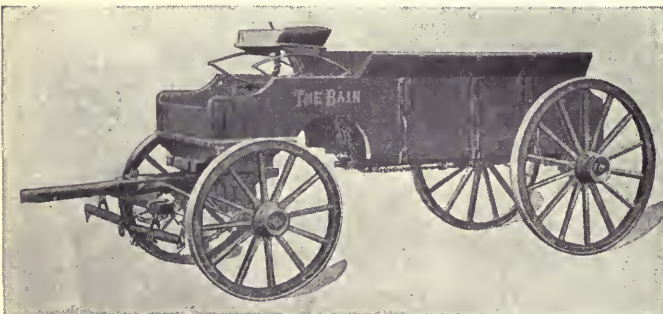
is pictured and described in Booklet No. 9.

Ask for it.

PORT HURON ROAD MACHINERY WORKS

(Of course it does)

PORT HURON, MICHIGAN



IF you use dump wagons or if you are thinking of buying dump wagons send for illustrated description of the

Bain Dump Wagon

which meets **every** requirement.

BAIN WAGON CO.

Main and Pearl Sts. KENOSHA, WIS.



VICTOR COMBINATION, USED BY THE BUFFALO FIRE DEPARTMENT, EQUIPPED WITH DAYTON AIRLESS TIRES

der seat, a drum mounted on the step containing 50 pounds of liquid carbonic acid gas, and a regulator which automatically controls the gas pressure in the drum (approximately 1,000 pounds) and delivers this liquid gas expanded into the tank at 150

pounds. Attached to the crank or handle on the head and revolving on an axis inside the tank is a series of paddles which agitate the water when the gas is passing into the tank, thereby producing a saturated solution of carbonic acid gas.



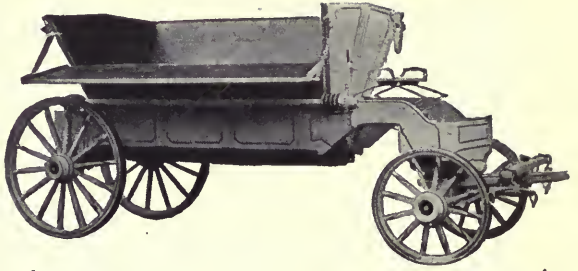
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Mounted on Adams 1½-ton chassis, equipped with Goodyear tires

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City after city is paying more
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authority with every possible
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Municipal Officials are invited to write for
particulars of a complete protective
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**Park Terrell, Manager,
Municipal Department**

THE FOREIGN DEPARTMENT

A Record of Municipal Progress Abroad

Conducted by Edward Ewing Pratt, Ph. D.

Progress of the Garden City Movement in Germany

Garden city movements have been organized in most of the countries of Europe, even including Poland and Spain, but the movement in Germany has made the most substantial progress of all. Progress there is all the more commendable, as Germany has had two serious difficulties with which to contend. The first is the difficulty of readily securing money on mortgages of cottage property, and the second is the objection of the German landowners to the new methods of housing and the consequent refusal of many corporations to give the movement their support. However, the establishment of numerous garden suburbs and the great demand for the Association's traveling exhibition on garden cities and town planning has proved that the movement in Germany is a permanent one and that the widespread interest is sincere.

The most important of the German schemes is Hellerau, a suburb of Dresden, in which over \$2,000,000 has been invested in the last three years.* The next in importance is Stockfeld, near Strassburg, which provides homes for poorer families as well as those for the more prosperous. Then there is the garden suburb of Margaretenhöhe, near Essen. It was founded by the widow of the late Herr Krupp, and is known as the "German Bourneville," being conducted under a trust fund similar to that of Bourneville. Stockfeld and Margaretenhöhe are each designed by a single architect; in the case of Hellerau, however, several prominent German architects have been assigned to the work in order to get a variety of style and experience.

An interesting suburb conducted on co-partnership lines is that of Wandsbeck, near Hamburg. The estate was purchased from the Corporation of Hamburg, and, although only in its second year, more than 150 houses are ready. During the past

year the Corporation sent the Lord Mayor and several of the city officials to England to study the garden city movement, and has agreed to lease additional land to the Association in order to complete a scheme for housing 30,000 people. This will effectively carry out the plan that the Association has drawn up for Hamburg and its environs. The Prussian Government has materially aided the Association by advancing large sums of money.

Garden suburbs of considerable size have been started at Karlsruhe, Mannheim, Marienbrunn and Nürnberg; thirteen schemes of varying size have been launched during the past year and have already secured estates.

An important garden suburb has been started near Berlin by the members of the German Garden City Association. They have secured 150 acres and building will soon begin.

The activity of Germany along these lines will doubtless become an important part of her conservation program.



A Garden Cities and Town Planning Association for South Wales

On November 25, 1912, a meeting was held at Cardiff, South Wales, and it was decided that South Wales should have a Garden Cities and Town Planning Association of its own, affiliated with the central organization. The fact that England, Ireland and Scotland had separate organizations influenced the taking of this step, as it was felt that Wales had an equal need for an association. Its object is to promote garden villages and garden suburbs and to convince municipal authorities of the practicability of scientific town planning. The members hope that by means of literature, lectures and conferences they will be able to bring the cause effectively before the public and to be of real assistance to groups and individuals who are trying to cope with the increasingly difficult housing problem.

* See THE AMERICAN CITY, December, 1912: "Garden Cities in Europe."

300,000,000 WIRE-CUT-LUG BLOCKS



No. 3074. Buffalo-Glenwood Road. 21 miles long. New York State Highway. Constructed June, 1911. Photo June 8, 1912, at Station No. 369. 13 miles from Buffalo City Line.

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| year 1911 | { | Sterling Brick Co..... | Olean, N.Y. |
| | { | Reynoldsville Brick & Tile Co., | Reynoldsville, Pa. |
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| During | { | Wabash Clay Co..... | Veedersburg, Ind. |
| 1912 | { | Clinton Paving Brick Co..... | Clinton, Ind. |
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| | { | Deckman-Duty Brick Co..... | Cleveland, Ohio |
| | { | Tuna Valley Pressed Brick Co..... | Bradford, Pa. |
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The combined output of these companies is 300 million blocks annually, or enough to pave a sixteen-foot roadway 750 miles long. Hundreds of cities already have admitted Wire-Cut-Lug Block in their specifications and the number of city engineers recognizing their merit is growing. See that your specifications are right. Wire-Cut-Lug Block never have been rejected where submitted. Write us for further evidence.

THE DUNN WIRE-CUT-LUG BRICK CO.

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PATENTED IN THE UNITED STATES AND FOREIGN COUNTRIES

The Summer School of Town Planning

The first Summer School of Town Planning held at Hampstead Garden Suburb of London under the auspices of the University of London in August, 1912, was such a success that it will be repeated in 1913. The session will last from August 2 until August 16.

Last year certificates were awarded to the students by the Extension Board of the University and a number of architects and engineers have already found them of great advantage. The practical difficulties which town planners have to overcome are studied at first hand, and the lectures are rendered of considerably more value by constant illustration of outdoor practice.

+ +

Plans for the New Delhi

A real verbal battle is being waged in the English papers over the designs for the New Delhi. The decision will ultimately rest with the professional advisers of the crown, and in the meanwhile one camp is advocating an adoption of the Renaissance style and the other is holding out for a style of architecture to be guided by local characteristics. The New Delhi will be almost exclusively the European section of the old city, and it seems a pity to overlook the many beautiful characteristics of Eastern architecture and neglect the talent that obviously exists along this line in modern India.

+ +

Taxes In Instalments

The Municipal Council of Sydney, Australia, recently instructed the Finance Committee to report upon the desirability of allowing citizens to pay their taxes in weekly or monthly instalments instead of half-yearly as at present. This expedient has already been adopted at Farsley, in Yorkshire, England. The Urban District Council, nine-tenths of whose rate-payers are working men, inaugurated a scheme by which taxes can be paid in instalments of one shilling a week or two shillings every fortnight, and the tax office is kept open on Friday nights for this purpose. They find that this has relieved the workman of much financial pressure, especially as Friday is pay day at most of the factories in the district and the day on which the small sum is least missed.

Marylebone has gone several steps fur-

ther and abolished tax collection altogether. The borough's revenue comes in without being collected.

In a certain district in Camberwell it is reported that nearly all the taxes are sent in by check. These innovations are welcomed by all save the tax collectors, and it almost looks as if that time-honored profession might some day become obsolete.

+ +

The Congress at Ghent—1913

The first International Congress of the Art of Town Planning and the Organization of Municipal Life will be held at Ghent during the summer of 1913 as a part of the Universal Exposition of Ghent. The Congress will be divided into two sections:

I. Town Planning.

II. Organization of Municipal Life.

The General Secretary of the first section is Paul Saintenoy, a well-known architect of Brussels and a professor at the Royal Academy of the Fine Arts. This group intends to discuss and develop further the important conclusions of previous town planning conferences, such as the one held at London in October, 1910, and those held at Berlin in 1910 and Belfast in 1911 and at Düsseldorf in 1912.

The division devoted to the Organization of Municipal Life will be directed by Emile Vinck, of Brussels, a well-known lawyer and member of the Senate. The object is to bring together representatives of organizations all over the world which have made a special study of municipal problems, and to formulate a more definite program of municipal betterment than has heretofore been drawn up.

The Congress will secure leading authorities to write up the reports of the proceedings, and as a final result of its deliberations will create a permanent Bureau of Information on Municipal Progress and Town Planning.

In connection with the Congress there will be a special exposition of town planning schemes and plans for municipal betterment. All local and foreign organizations are requested to contribute material. Many valuable and interesting exhibits are expected.

The proceedings of the Congress will cover four or five days, and excursions are being planned to Ostende, Bruges, Brussels, etc., to study the new development in these cities.

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Directory of some of the well-
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CLEARFIELD BRICK MANUFACTURING CO.

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LARGE CAPACITY

CLEARFIELD, PA.

A New Motor Street Cleaner

During the second week of December, 1912, the town of Southport, in England, held a series of demonstrations of a new type of motor vacuum street cleaner. These demonstrations were attended by several hundred delegates from all parts of England. The machine is the invention of an Italian engineer and has been used for some time in Milan with very satisfactory results. It will doubtless revolutionize street cleaning methods in England.

By the aid of a large brush revolving at a very high speed it draws all refuse from the street and deposits it in two enclosed bins behind the brush. The horse-drawn brush was an improvement over hand sweeping, but this new method does away with all danger of the spread of disease from piles of refuse lying at the side of the street waiting to be carried off. The motor cleaner sweeps and gathers at the same time, and can be run at a maximum speed of eight miles an hour. At the time of the demonstration the streets were littered with every kind of refuse, including granite chippings, sand and straw, and on each occasion the machine is said to have been operated with perfect results.

An English firm has bought the patent rights for the machine for all countries save Italy, and they have rebuilt their factory to enable them to fill municipal contracts.

+ +

Regulation of Milk Trade in Prussia

The Prussian ministry has recommended certain principles which are to serve as a basis for legislation in regard to milk trade in Prussia. The ministry has turned over to the police department entire jurisdiction in matters pertaining to milk. It has drawn up a unified system of legislation as far as is possible in view of the multifarious forms in which milk is marketed and the various sources from which it is supplied. It recognizes that extreme care will have to be exercised in the use of this power which has been given to the police department in determining cases where deviation from the general principles laid down by the ministry is either necessary or admissible.

Minute directions have been given for the supervision of the quality of the milk and the labelling of the milk containers. Under the term "milk" are included fresh, pas-

teurized, skimmed or sour milk, buttermilk and cream. The Health Police are charged with the supervision of conditions at the sources of the milk supply, and also with the regulations having to do with its sale.

Under the general requirements the sale of milk will be prohibited if (1) the milk is polluted or contains a considerable sediment, water, ice, or any artificial preservatives; (2) if it is putrid, sour or contains blood; (3) if it smells or tastes as if it were not strictly fresh or if it curdles after heating; (4) if it has been obtained from animals suffering from any disease, or which are under treatment of the veterinary surgeon; or (5) if it is obtained from cows that have been fed on food other than that prescribed for milk cows. All milk placed on sale must be designated as fresh milk, pasteurized milk, sour milk, buttermilk or cream. Pasteurized and fresh milk is divided into two classes: that which contains 2.7 per cent of butter fat or more, and milk containing less than that amount of butter fat, which is called skimmed milk. The composition of the other grades of milk is also minutely provided for. Careful rules have been laid down concerning the cleanliness of the milkman and the care which must be used in milking, and the care of the milk before being sent to market. An interesting provision is that all the milk cans, or their containers, must be enameled inside, so that rust is absolutely prevented. Other provisions concerning the care of the milk are similar to those in this country. It is prescribed that the milk must be covered, that the containers must be carefully and thoroughly cleaned by hand or by brushes provided for the purpose, that the milk must not be kept in living or sleeping rooms, and that such rooms as are used for the sale of milk must be thoroughly clean, cool and free from dust.

Special regulations have been drawn up for the sale of milk which is used for special purposes, such as that used for children, infants and sick persons. In addition to all the other regulations pertaining to the sale of milk, this grade of milk must have at least three per cent of butter fat.

The minuteness and thoroughness with which these regulations have been drawn up are characteristic of the Germans, and it is quite likely that with such regulations in force the infant death rate will continue to decline in Prussia, as has been the case during the last twenty years.

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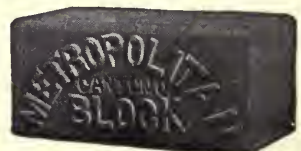
"McAVOY BLOCK"

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New Sources of City Revenue Recommended for New York

A noteworthy report was presented on January 11 by an advisory commission of citizens appointed by Mayor Gaynor to coöperate with the budget committee of the Board of Estimate and Apportionment of New York in ascertaining new sources of city revenue.

New York City's budgetary income is now derived as follows:

| | |
|------------------------------|-------------|
| Real estate tax..... | 77 per cent |
| Personal property tax. 3 " " | |
| Miscellaneous revenues | 20 " " |

Among the most interesting sections of the report is that advocating an unearned increment tax on future increase in land values. Says the commission:

We recommend an increment tax of 1 per cent per annum to be perpetual upon all increments of land values, as shown by comparison with the assessed valuations of the year 1912, and to be in addition to the general tax levied upon all real estate. If, for instance, the assessed value of a piece of land rises from \$100,000 in 1912 to \$110,000 in 1913, the owner would be called on to pay the general tax, say at the rate of 1.83, which would amount to \$2,013, and in addition the increment tax of 1 per cent of \$10,000, or \$100.

The proposed tax should not be levied upon any increment which results from the labor or expenditures of the owner. If land appreciates because of improvements paid for by the owner, such as grading and clearing, or connections for water, light and sewage, or street openings, paving, etc., such an increment, to the extent that it represents capital invested by the owner, would not be subject to the tax. We propose, in short, that the tax shall be levied only upon the "unearned" increment, which results from the growth of the city and from improvements made by the city or by others than the owner himself.

If, therefore, the value of a piece of land should rise from \$100,000 in 1912 to \$110,000 in 1913, and the owner can show that he has expended \$4,000 in permanent improvements, either upon his own initiative or in payment of special assessments levied by the municipality, he would be subject to an increment tax on only \$6,000; and thereafter the base valuation of the land, from which future increments would be calculated, would be \$104,000 instead of \$100,000.

The average increase in the land values of New York City during the past decade was about \$150,000,000 a year. On that basis an increment tax of 1 per cent would yield in the first year a revenue of \$1,500,000; in the second year, \$3,000,000; in the third year, \$4,500,000;

in the fourth year, \$6,000,000, and so on, until in the tenth year its yield would approximate \$15,000,000.

The report recommends that the personal property tax be reduced to 3 mills on the dollar, with no offset for indebtedness. Theoretically, the members of the commission believe that the personal property tax should be entirely abolished, but realize the political improbability of immediately securing such an end.

Among the recommendations for other sources of city revenues are:

Requirement of adequate annual payments for the privilege of erecting and maintaining billboards and signs.

Requirement of adequate annual payments for the use of the city's sub-surface.

The passage of an adequate ordinance for licensing hack stands.

The licensing of animal-drawn vehicles.

Increase in motor vehicle tax and contribution of part of that tax to the city.

Extension of the use of water meters.

That the city of New York strongly support the pending amendment to the state constitution granting to cities the power of excess or additional condemnation.

That the principle of special assessment be applied to the construction of rapid transit railroad extensions.

That no form of real property, such as churches or cemeteries, shall be exempt from assessment for local improvements.

That the city sell to better advantage the asset which it has in the commercial use of garbage and other forms of city waste.

The commission's recommendation for a tax on billboards will no doubt interest many other cities which are fighting the billboard nuisance:

We specifically recommend that upon each square foot of the area of billboards, signboards and electric signs an annual charge be imposed equal to 2 per cent of the assessed value per front foot of the land occupied.

This commission believes that the index of taxation based upon the value of the land represents a just index of the value of any location for advertising purposes. The publicity value contributed to desirable locations is peculiarly a value which is created by the community itself. In many important parts of the city there is a strong tendency to secure the publicity income and to postpone the full utilization of the land on which billboard taxpayers and electric signs are erected. The erection of such structures also has an injurious effect upon adjoining realty values and constitutes, in many cases, a real nuisance.



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Vol. VII. 2.00

On account of our supply of bound volumes being limited we advise all subscribers who wish to complete their sets to communicate with us as soon as possible.

So long as they are tolerated there is every reason why the city should recognize this value which its citizens themselves create and secure from it an income for the support of their government.

We believe that such compensation can be collected with little or no evasion, and to that end we recommend that all applications for the erection of advertising devices be made to the respective borough presidents, and that the said presidents be required to inform the Department of Taxes and Assessments of the

area and location of all such devices erected in their respective boroughs.

On the subject of water meters the report says:

We believe that the wider use of water meters can safely be undertaken, and that the same would greatly increase the revenues derived from the city's water service, as well as decrease expenditures involved through water waste.

How Jacksonville Voted \$1,500,000 for Municipal Docks and Terminals

In a campaign which resulted triumphantly on January 21, the Board of Trade of Jacksonville, Fla., has rendered a noteworthy service to its city. To this organization belongs the unique distinction of having called together, at its own expense, a special session of the legislative body of the state, and of having carried a subsequent bond issue for \$1,500,000 by a 99 per cent vote.

About eighteen months ago, the Jacksonville Board of Trade came to a realization of the fact that the docking and terminal facilities were totally inadequate for the business of the port of Jacksonville. A short time previously a 24-foot channel in the St. Johns River had been completed at an expense to the National Government of about \$3,000,000. Immediately the commerce of the port began to grow, and vessels of deeper draft commenced to come. Almost the entire river front was owned and controlled by transportation companies, the city owning nothing on the water front excepting the foot of the street leading to the river.

Moreover, it was found that there were only three docks in and near the city that could accommodate foreign vessels at one time.

The Board of Trade determined to rectify these conditions, and appointed a committee which was known as the Improved Terminal Facilities Committee. This committee held upwards of sixty meetings during 1912. A very thorough investigation of the municipal ownership of docks and terminals at all the ports in this country was made, and also a study of the ports in Europe. The results reported from the

municipal ownership of docks at Los Angeles, Baltimore, New York and San Francisco were so satisfactory that the committee determined that Jacksonville must own her own docks and terminals; but in order to do this, it was found necessary to have a special act of the legislature passed. The Board of Trade, therefore, requested the Governor of the state to call a special session of the legislature, at its expense. The request was complied with, and in October last the legislators met in the city of Tallahassee. Two acts were passed, one an enabling act, authorizing the city to own, operate and control municipal docks, and submitting to the electors of the city the matter of a \$1,500,000 bond issue, to carry out the purposes of the act. The other bill granted to the city the right to use the middle ground in the St. John's River, near the city, for the purposes of a dock site, comprising over 200 acres with four miles of frontage on channel.

Having successfully brought its work to a conclusion, the Improved Terminal Facilities Committee was discharged with the thanks of the Board, and immediately a Dock Campaign Committee was appointed, composed of not only Board of Trade members, but of other prominent citizens of the city. For six weeks a campaign of education was waged, during which upwards of 50,000 pieces of advertising matter and literature were issued from the committee's office. Slides were put on at all the moving picture theaters, showing the docks at Jacksonville and the various ports of other countries. Ten thousand campaign buttons were issued.

Over 4,000 inches of reading matter re-



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This street has *no pitch expansion joints*—it is subjected to the strain of heavy traffic and exposed to the direct rays of the sun all day—yet it has never shown a bulge nor buckle since it was laid.

This street is but one of many examples of the perfect efficiency of the *Carey Elastite Paving Joint*. Equal success

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No wood strips are needed where *Elastite* is used.

Complete information and sample will be sent promptly, on request.

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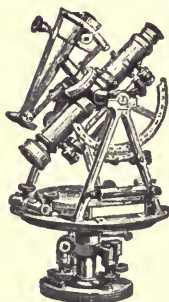
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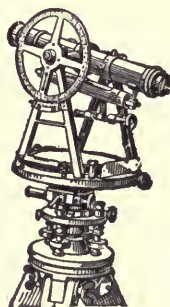
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is a problem which is "*always with us,*" until it is rightly solved.

The Hampton Sedimentation Tank will solve *your* sewage disposal problem.

If you will send us your name and address, we can place the evidence before you—evidence which we believe will make you unwilling to use any but the *Hampton Method* of handling sewage in connection with your plans for a disposal system.

Used in connection with an electrolytic hypochloride treatment, the process would be absolutely odorless and the effluent free from disease germs.

If you would like facts and figures write to

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San Francisco's Municipal Street Railway

AFTER dreaming and hoping and fighting for seventeen years, the residents of San Francisco literally went into a frenzy of enthusiasm when the wheels of the Geary Street Municipal Railway, built, owned and operated by the citizens of San Francisco, turned at noon on December 28.

Now almost a month has elapsed. Each week has seen an increase in the earnings of the road. There has not been a single delay in operation due to misunderstanding or mismanagement, and the few opponents of municipal ownership who were not converted in the long battle have no place to show their heads in San Francisco to-day.

On that noonday when the Geary Street cars left their terminus, downtown San Francisco wore the clothes of New Year's Day. The route of the municipal road was black for blocks with citizens, who yelled themselves hoarse, threw their hats in the air and beat their friends over the heads as the victorious municipal cars moved out. It was amusing, during those first days, to stand on Geary Street and watch the bright new cars travel past, for seldom a business man, hurrying to his office, saw the gray steel trolleys approaching that he did not halt on the curb to admire, straighten up, watch the car pass and hustle on down to work with a grin on his face.

Enthusiasts for municipal ownership predict the Geary Street success is the entering wedge for the complete municipalization of all lines in San Francisco, which they argue will be absorbed as rapidly as franchises expire. Even to-day one other company is about to be closed out by the city.

It is interesting to note that the first fare paid on the municipal railway was paid by Mayor James Rolph, Jr., with the first five-cent piece ever coined by the San Francisco mint. The local mint only began manufacturing five-cent pieces within the last month. This historic five-cent-piece was recovered from the fare box and will be properly mounted and kept as a souvenir in the City Hall.

It is hard for one unacquainted with the record of former political corruption in San Francisco and local conditions here to appreciate thoroughly the enormous ex-

pense of time and energy and money, the endless court fighting, that finally conquered all obstacles and put the Geary Street Municipal Railway on the map.

It was in August, 1896, that the Geary Street, Park and Ocean Railway made application for a renewal of its franchise. Then the improvement clubs of the city secured an injunction preventing the Board of Supervisors from opening the bids for the franchise. The municipal ownership cause gained friends and the powder burned slowly for two years, and in May, 1898, the new charter of the city, declaring the purpose of the municipality to purchase and operate public utilities, was carried. The holding company of the Geary road made another application for a franchise in June, but this was again denied.

The first voting proposition, that of issuing bonds to reconstruct the road, was submitted in December, 1902, and failed by considerable of the two-thirds vote necessary to carry. In the February following the company tried again to get a franchise through, but tried in vain. In October of the same year another bond election was called, and again the powerful politicians succeeded in defeating it. The next month the franchise expired. The city and the railroad could reach no agreement, and following the advice of the City Attorney, the company began paying 5 per cent of its gross receipts into the city treasury for permission to run its cars. This condition endured until May, 1905, when the Supervisors declared it their intention to rebuild the road without recourse to a bond issue.

A month later the sum of \$350,000 was set aside with which to begin the reconstruction of the road. The construction contract was signed just before the great fire of 1906; which destroyed the records, plans and estimates of the proposition; and on account of the demoralized condition of the citizens and the devastation of property, plans for reconstruction were abandoned.

No sooner had San Francisco begun to rise from her ruins than were the municipal ownership plans reborn with greater vigor than ever before. Another appropriation was made in 1907 for the beginning of the reconstruction work, but the appropriation was declared illegal. The



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next recourse was a vote for a \$2,000,000 bond issue, which was defeated by the woefully small figure of 421 votes. In December of the same year the issue was submitted in different clothes, two issues being voted upon. Both carried overwhelmingly.

After the passing of the ordinance formally authorizing the bond issue, the president of the Geary Street road sued to restrain the bond sale, on the ground that the city had exceeded its authority in authorizing the issue. The case was bitterly contested through the courts, and finally affirmed in July, 1910.

From this point down to the present day the work on the plan has gone ahead as rapidly as possible. The total length of the tracks as at present constructed from

Kearny to Thirty-third Avenue, including the branch to Golden Gate Park, is 5.45 miles. The total cost per mile has been \$139,000. There are yet to be constructed 1.4 miles, which will make a total of 7.1 miles from the Ferry Building downtown to the ocean.

The road is under the direct supervision of a tried street railways man, who as superintendent has the active management of the concern in his hands. The city handles the money and takes the profits. By and large, it looks as though the bond issue is not going to be a bugaboo to worry the present taxpayers' grandchildren.

WALTER M. HARRISON.

San Francisco, Jan. 20, 1913.

Items of Civic and Municipal Progress

Perfecting Our Instruments of Democracy

What is probably the most valuable single issue ever published of a magazine relating to direct legislation and charter reform is the January number of the *Equity Series*. Dr. C. F. Taylor, editor and publisher, has succeeded admirably in his aim to present in this issue a series of articles of special importance to state legislators interested in the initiative and referendum, the recall, direct primaries and the preferential ballot; and to municipalities constructing new charters involving proportional representation, the short ballot and other up-to-date methods in local government. *Equity* is published quarterly, at 50 cents per year, at 1520 Chestnut Street, Philadelphia.

+ +

The Lincoln Monument in Lincoln, Neb.

For many years the desirability of erecting a suitable monument to Abraham Lincoln in the city which bears his name has been discussed. As the centennial of his birth approached, the project took definite form in the organization of an association having the erection of such a monument as its object. About \$10,000 was secured by private subscriptions for the enterprise. The legislature of 1909 appropriated \$20,-

000, and the city of Lincoln gave \$5,000 out of its public funds.

The Governor of the state was *ex-officio* president of the association in charge of the plan. The Secretary of State was its secretary and the State Treasurer its *ex-officio* treasurer. The officers selected F. M. Hall, of Lincoln, to name a committee, which in turn was to select a sculptor. Mr. Hall accepted the commission and named as his committee E. Benjamin Andrews (ex-Chancellor of the University of Nebraska), Gen. Charles F. Manderson, G. W. Wattles, Prof. William F. Dann, Dr. H. B. Lowry and Addison Waite.

The commission for the work was given to Daniel Chester French, the New York sculptor. Mr. French associated with him Henry Bacon, the New York architect, who was subsequently chosen to prepare plans for the great national Lincoln memorial at Washington. Both of these artists visited the city, looked over the ground and decided upon the west entrance of the Capitol grounds, Fourteenth and J Streets, as the best available location. Mr. French spent several months in preparing his sketches, and on January 30, 1911, brought his preliminary models to Lincoln. These were shown in the art room of the State Uni-

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The plan followed by this book is to present collectively, games and dances suitable for children
or adults of each particular school grade or age group. This procedure places in the hands of a
teacher a graded selection of games and dances, arranged in nine progressive grades. Games
marked (R) can be played in a room as well as in a play ground. In an appendix a limited
number of "quiet games" and "problems" for hot weather is presented, following which is a list

of track and field events which may be undertaken in the average playground. Connected with this is a record of
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of so many reports of actual fires in the field as well as laboratory work by various investigators should commend the book to the close student of the subject
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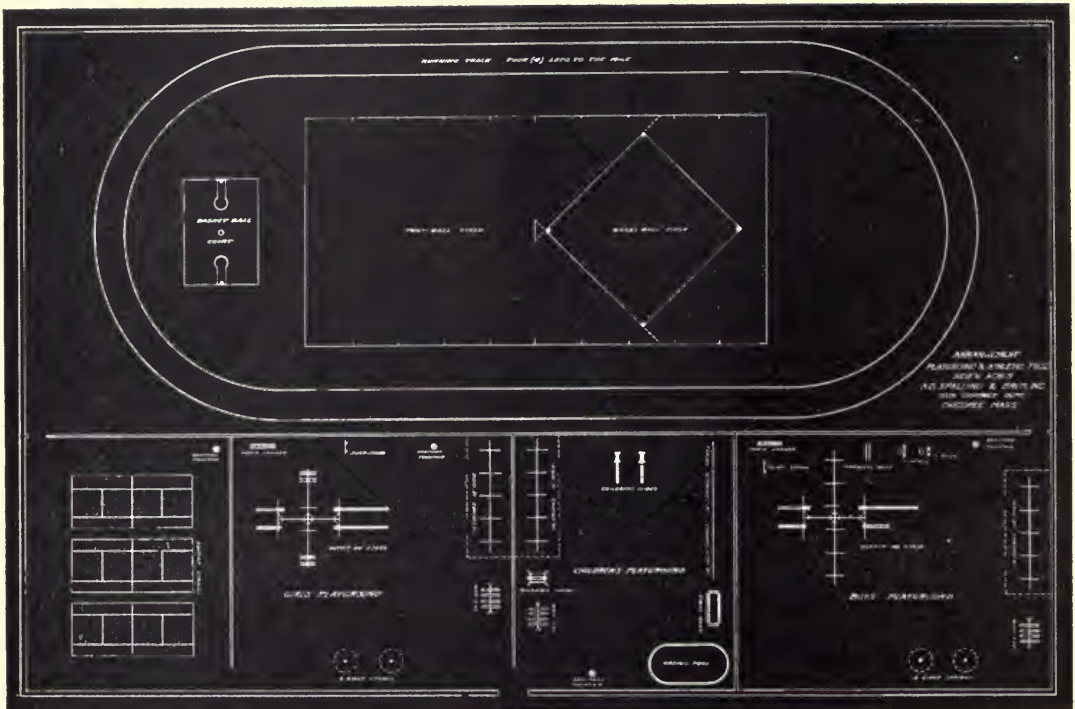
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versity, and were accepted by the commission in charge without suggestions or alterations. A view of the completed monument is shown on page 219 of this issue.

The cost of the main figure, done by Mr. French, and cast in bronze at a well-known foundry, was \$20,000. The architectural accessories and the miscellaneous expenses connected with the enterprise increased the total cost to about \$35,000. Full reports of the money received and expended will soon be made officially.

✦ ✦

San Francisco Votes \$2,450,000 of Bonds

At a bond issue election held on December 20, the voters of San Francisco authorized two of the five bond issue proposals submitted to them. Those adopted provided \$1,700,000 to complete the city and county jail, emergency hospital and morgue; and to complete the city and county hospital and erect buildings for separate treatment of tuberculosis and other infectious diseases; also \$750,000 for a modern fire and police signal system, including fireproof central alarm building, 950 fire-alarm boxes, 600 police-patrol boxes and 200 flash lamps to call policemen.

✦ ✦

A Winter Course in Highway Engineering

The Ohio State University, of Columbus, announces an exceedingly practical program for its winter course in highway engineering. This course is given under the auspices of the Department of Civil Engineering of the University, in coöperation with the State Highway Department. Admission is free, except for a registration fee of \$1, the money to finance the course being given by the Ohio Good Roads Federation. The dates are February 24 to March 8, inclusive.

✦ ✦

Fifteen Months of Commission Government in Pontiac

The first detailed report ever published by the city of Pontiac, Mich., has been issued by the commissioners of that municipality. The report covers the first fifteen months under the commission form of government, embracing the period from May 1, 1911, to August 1, 1912. The following paragraphs are of special interest as indicating some of the benefits which the city has derived from its new charter:

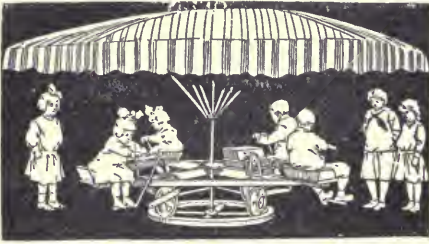
The strongest argument in favor of commission government is in the results obtained in this city under the present administration.

The Commission started with the following burdens: An over-draft at the bank of \$6,855.99; an over-draft of \$51,673.21 belonging to the different funds, which had been used by the previous administration in paying other obligations than that for which the money was raised; bonds and interest coming due, amounting to \$8,582.50, and the city employes and current bills from two to six weeks in arrears; with no money on hand to meet the expenses of the city for the three months before the taxes for the year would become available, a burden amounting in the aggregate to over \$94,000 in round figures.

The first step taken was to put the city on a cash basis. In order to do this, the people were asked to vote a bond issue of \$100,000, which they did and which was used to clean up the indebtedness above shown.

The next step was the making of a budget which, while sufficient to meet the demands and to conduct the needed improvements, would not be a burden upon the taxpayers. How well this was accomplished is shown by the following figures: The tax rate was reduced from \$12.31 per \$1,000 valuation the previous year, to \$11.57 per \$1,000 valuation, and this year still further reduced to \$8.61 per \$1,000 valuation, and yet the Commission has built in the time (15 months) one-fifth of the entire sewer system—a trifle over 7 miles—of the city; has built four and one-third miles of cement sidewalk; 5,530 square feet of crosswalks; expended in pavements \$84,779 in payment of 38,482 square yards of paving; has constructed 6,151 feet of storm sewer; 17,870 lineal feet of cement curb; built a tool house at a cost of \$1,600, purchased an auto chemical fire truck at \$5,500, fire hose to the amount of \$1,000; fire switchboard and underground cable, costing \$3,000; built a detention hospital, costing \$3,000; purchased a street flusher for \$870, a policeman's motorcycle for \$285, paid nearly \$6,000 to the Commercial Association and nearly \$2,000 to the hospital; laid nearly 16,000 feet of water mains; increased the water services one-sixth; placed seventeen new fire hydrants; increased the water meters one-third; has finished opening Wayne street, West Huron street, condemned and opened Jessie and Sanford streets across the M. A. L. R. R.; expended \$18,000 in grading, filling and graveling the streets of the city and over \$5,000 in street cleaning; has induced the Railway Commission to compel the railroads to put in gates and gate tenders at all important railroad crossings; has secured the equipment of the local street cars with air brakes, and created and paid into a sinking fund \$15,175.

Since April 1, 1911, the city has received \$4,355.53 as interest on daily balances, a source of income from which the city never had received anything previously, an amount sufficient to pay the salaries of the City Clerk, Treasurer, Water Collector and stenographer for the full time.



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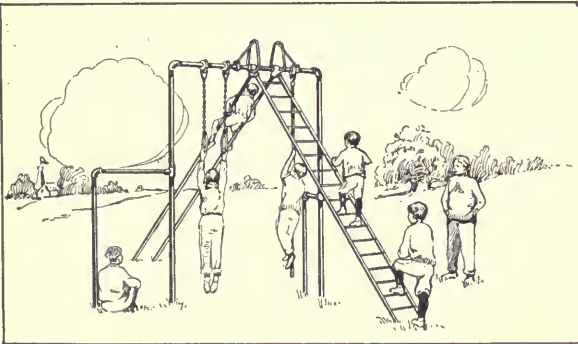
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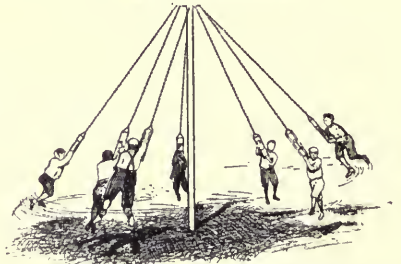
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DINNER OF THE PHILADELPHIA DEPARTMENT OF PUBLIC WORKS

Mayor Blankenburg of Philadelphia Dines with 1200 City Employees

At a dinner which Mayor Rudolph Blankenburg characterized as the most unusual event of its kind ever held in any municipality in the world, more than 1,200 employees of the Department of Public Works of Philadelphia made merry on the evening of January 22, and gave evidence of the friendly relations that have been established between the officials of the municipal government and the men in departmental and bureau employ.

The *Philadelphia Public Ledger* comments editorially on the event as follows:

The dinner of 1,200 employees of the Department of Public Works was a gathering notable in the city's history, for it celebrated the banishment of the incubus of politics in favor of the spirit of fraternal efficiency in the municipal service.

There were present not merely the employees of the department, whose own contributions defrayed the cost of the feast, but their wives came with them, and at the guest table were seated the Mayor and his Cabinet and men prominently representative of Philadelphia in finance and in business.

It was the inauguration of a new era of good feeling. Those present were inspired with the glowing realization of the city as more than a soulless and impersonal employer, and each man in his capacity straightened his shoulders in a new feeling of pride in his work and in

himself. It was made known that this fraternal occasion is but the beginning of a systematic cooperative effort for the welfare of city employes, a movement from which officious espionage will be wholly absent. Such a dinner is probably unprecedented in the annals of American cities, and the benefit that ensues to those whose pulses thrilled with the meaning of it is immeasurable. It was good for them to be there—it was good for Philadelphia.

+ +

Bureaus of Municipal Research for Milwaukee and Chattanooga

A Bureau of Municipal Research has been inaugurated by the city of Milwaukee. As director of the new bureau, Ralph Bowman has been chosen. With his previous experience as a cost accountant, as a member of the staff of the New York Bureau of Municipal Research, and as secretary of the Municipal Government Association of New York State, Mr. Bowman seems peculiarly well fitted for his new position.

Chattanooga's first Bureau of Municipal Research, created by resolution of the Board of Commissioners, met for organization on December 13. Its members were chosen by the local commissioners from names submitted by various commercial, religious and civic organizations of the city. The Bureau organized by electing Rev. Ira M. Boswell chairman and J. S. Fletcher secretary.

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City Planning News and Notes

Cincinnati's Civic Center Commission

The Civic Center Commission of Cincinnati, O., was organized on January 16, with Mayor Henry T. Hunt as chairman, L. A. Ault, vice-chairman, and Service Director Price, secretary.

It was pointed out that the state law makes it possible for the Civic Center Commission to require the submission to it of plans and specifications of all public buildings to be erected within the corporate limits of the city.

+ +

A Civic Center for Toledo

On January 20, Mayor Brand Whitlock, of Toledo, O., submitted to the council of that city the final report of the Commission on a City Hall and Civic Center. A previous report of the Commission, submitted last October, resulted in the issuing of bonds for the building of a city hall. The latest report, which also carries with it Mayor Whitlock's hearty endorsement, advocates the purchase of land bounded by Canton, Southard, Orange, Erie and Jackson Streets for a civic center, at a cost of \$815,850.

+ +

Manual of the City Planning Commission of Pittsburgh

The Department of City Planning of Pittsburgh issued last month a valuable little manual containing a copy of the act creating and regulating the department; an outline of the plan and scope of the commission, the rules under which it operates, a list of its committees and a statement of their duties.

+ +

Buffalo Chamber of Commerce Drafts a City Planning Bill

At the November meeting of its Board of Directors the Buffalo Chamber of Commerce approved a bill for presentation to the New York State Legislature, providing for the creation of an official city planning commission for the city of Buffalo. The proposed commission is to consist of eleven members, including five of the city officials

and six citizens holding no office in the city government. It is to act in an advisory capacity in connection with future municipal structures, boulevards, parks and city planning generally. Included in the bill is a provision for the careful consideration, with a veto power by the commission, of all works of art offered to the city, before acceptance.

+ +

A New System of Naming Streets Proposed for the Borough of Queens

The Topographical Bureau of the Borough of Queens, New York City, has prepared a map showing the proposed development of an area of some 6,000 acres in that borough. A feature of the map noteworthy for New York is the curvilinear street system adopted for the portion north of Hillside Avenue, which is a rugged, hilly and wooded district, in part at the present time developed with pretentious homes. The rectilinear development of streets has been abandoned for a more picturesque treatment of winding drives, and some attention has been given to the preservation of the natural beauties. The wooded slopes, small lakes and bold terraces are preserved.

It is proposed that, as far as practicable, all thoroughfares shall be numbered instead of named; those running in a northerly and southerly direction being known as "streets," and the main arteries crossing these being designated as "avenues." Where a short street intervenes between the regular streets which are numbered, it is called a "place" and given the number of the street immediately preceding it, as 214th place; where a short avenue intervenes between the regular avenues that are numbered, it is called a "road" and is given the number of the avenue immediately preceding it, as 112th road; if more than one thoroughfare intervenes, the second is called a "drive," as 114th drive. Where the streets could not be made to conform to the general scheme, the old name is held or the nomenclature is appropriate to the section through which the street passes, either historically, topo-

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graphically or traditionally. The word "street" is employed if the highway is parallel to the streets, and "avenue" if parallel to the avenues; and if not parallel to either, it is called a "lane" so as to avoid confusion of the house numbers.

✦ ✦

Reports Submitted to Scranton and Erie

There has recently been prepared by John Nolen, for the City Improvement Committee of Scranton, Pa., a report on the improvement of Scranton. It includes main streets and thoroughfares, plans for the extension of Scranton, including a typical layout for suburban development, an outline of a system of parks and playgrounds for the entire city, and a scheme for adding convenience and beauty to the central city.

A preliminary report on the extension and improvement of Erie, Pa., has recently been presented, by the same expert, to the City Planning Committee of the Chamber of Commerce and Board of Trade. Mr. Nolen's recommendations cover thoroughfares and main streets, school grounds, playgrounds, parks and parkways, Presque Isle, State Street, basins, the water front, Perry Square, the Union Station, a public market and some miscellaneous minor matters.

✦ ✦

City Planning Collections of the School of Landscape Architecture at Harvard

The city planning collections in the library of the School of Landscape Architecture at Harvard University have received large additions of European material through its chairman, Professor James Sturgis Pray, who spent the last college year in travel.

The library of the school offers exceptional facilities for research in city planning. Its collections in this field, drawn from North America and Europe, consist of the following: General maps, monographs on special subjects, reports on special cities and towns, pamphlets and magazines, official city maps, plans of general improvements in progress or projected, plans illustrating the smaller problems of city planning, photographs and plates and postcards. The school is now making arrangements to add South American material to the library. The collections are being classified and indexed according to a comprehensive scheme which has been drawn up and which will soon be published.

Besides building up its collections, the school has been compiling for several years an extended bibliography of city planning. This was issued in preliminary check-list form last May in coöperation with the Library of Congress, which had recently become interested in the subject and collected references from its own resources. After large additions of titles, careful arrangement according to the classification scheme drawn up by the School, and as much annotation as time permits, the bibliography will be published under the above joint authorship. During its development, the bibliography in card form will be kept in shape for consultation by research students in the School of Landscape Architecture.

✦ ✦

Civic Aid from a Department Store

One of the stores in Dallas, Texas, has been lending a voice through the advertising columns of *The Dallas Morning News* in the civic education of the people. Parts of its preachments on city planning and the

The "Kessler" Plan

What It Means to the Children of Dallas

IT HAS occurred to the "Ad" Man at Titcher-Goettinger's that the strongest and most persistent advocates of the "Kessler Plan" in Dallas should be fathers and mothers.

We know that thistles do not grow on glaciers, and it is almost quite as impossible for crime, or uncleanly minds and bodies, to propagate in cities that abound in beautiful parks, playgrounds, boulevards and beautiful shrubbery and flowers, that are so placed as to be adjacent to the homes of its humblest citizens.

As it is the moral obligation of every institution to provide for its people every possible comfort and convenience to make them happy, JUST SO DOES THIS OBLIGATION APPLY TO EVERY COMMUNITY: TO PROVIDE FOR THE HEALTH, COMFORT AND HAPPINESS OF THE MOST HUMBLE OF ITS CITIZENSHIP.

planting of shade trees are herewith reproduced. The rest of the triple half-columns from which these extracts are taken speak of the ideal of making Dallas the home of equal opportunity for rich and poor, by developing a better, cleaner, more beautiful city, and thus strengthening the moral fiber of its citizenship. The gift

We Have Ordered 10,000 Young Elm Trees to Give to the Children of Dallas Next Arbor Day, Feb. 22d

which this business firm will make to the children of Dallas next Arbor Day—10,000 young elm trees—and its words of counsel as to planting and preservation and enjoyment of trees, are an excellent instance of practicing one's preaching.

Garbage and Trash Cans

The heavy metal used in the construction of our Garbage Cans makes corrugations unnecessary, therefore producing a sanitary can by eliminating the dirt catching features.

Heavy Ash Can bottoms.

Extra deep Covers used.

By buying *Rochester Made Garbage Cans*, you have the best obtainable.

Send for catalogue.



Iron Horse Brand Metal Ware

Made by

ROCHESTER CAN COMPANY
ROCHESTER, NEW YORK

GRASS SEED FOR EVERY PURPOSE DREER'S SPECIAL BRANDS

of Grass Seed are the result of seventy-five years' experimenting to obtain the **best**. When you sow DREER'S DEPENDABLE SEEDS, you sow carefully blended, re-cleaned high-grade seed, which have been carefully tested for germination, and will **grow the kind of turf you want**. We have a variety suited to every need or condition—for wet soil or dry, sunny or shady places.

For Parks and Cemeteries, Country Clubs Polo Grounds, Golf Greens, lawns or terraces.

We will be glad to answer any questions you ask. Our **SPECIAL GRASS SEED CIRCULAR** gives explicit directions free.

Dreer's Garden Book for 1913 is ready.

Full of helpful information and suggestions on lawns, ornamental planting, flower and vegetable gardens. Sent free to anyone mentioning this publication.

HENRY A. DREER :: 714 Chestnut St., Philadelphia, Pa.



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keep waste paper, fruit skins and other trash off your streets, park lawns and public grounds unless you provide proper receptacles.

If you will kindly send us your address and mention **THE AMERICAN CITY** we will gladly furnish desired information regarding trash receptacles, ash cans and garbage cans of all kinds, for parks, streets, public buildings and grounds.

American Can Co.
Toledo New York Chicago

LIST OF BOOKS ON MUNICIPAL AND CIVIC SUBJECTS FURNISHED
ON REQUEST BY THE AMERICAN CITY

Municipal and Civic Publications

Copies may be ordered of THE AMERICAN CITY

DONATH, AUGUST, Superintendent of Documents, Government Printing Office, Washington, D. C., Compiled by Mary A. Hartwell, under direction of.

Checklist of United States Public Documents, 1789-1909.

Congressional: To Close of Sixtieth Congress.

Departmental: To End of Calendar Year 1909. 1911. xxi + 1,707 pp. \$1.50

The work is primarily based on the great documentary library of the Superintendent of Documents Office, the shelves of which show complete files of all official publications from the establishment of the Government to 1909, with the exception of some of the publications of very early Congresses and a few miscellaneous publications which the library has been unable to obtain from various sources. Both librarian and historian will find it of great value. The librarian may use it to check off the government publications on his shelves, and thus determine the completeness or incompleteness of his collection, besides being able to inform his patrons of the existence or non-existence of supposed government works. The historian will find it valuable in pointing to and unearthing material. The publications are arranged after the classification used in the Superintendent of Documents Office. A concise but clear exposition of the system is given in the introduction.

NICHOLS, J. C.

Real Estate Subdivisions—The Best Manner of Handling Them. November, 1912. 15 pp. 25 cents

An address delivered at the fifth annual convention of the National Association of Real Estate Exchanges, at Louisville, Ky., June 20, 1912. The author tells of the actual development by himself of a tract of more than 1,000 acres—"The Country Club District" of Kansas City, Mo.—into an ideal residential section. "Representing," says the American Civic Association, "eight years of actual execution, according to a plan, and the introduction of modern ideas in 'saving hills and dales' in the laying out of streets; in the best in the planting of trees; in the illumination of streets; in the subdivision into lots; in wise legislation for the development of the property; and in safeguarding by regulations and restrictions the interests of all those who are induced to become home-owners in the District."

NEW YORK BUREAU OF MUNICIPAL RESEARCH.

Annual Report of Training School for Public Service. 1912. 32 pp.

THE NATIONAL ECONOMIC LEAGUE.

The Initiative and Referendum. 1912. 71 pp. Paper, 25 cents; cloth, 50 cents

Containing arguments for and against the initiative and referendum by the following special committee of the National Economic League: For the affirmative—Robert L. Owen, United States Senator from Oklahoma; William Allen White, editor of the *Emporia (Kan.) Gazette*; Frederic C. Howe, Director of the People's Institute of New York; Lewis J. Johnson, Professor of Civil Engineering, Harvard University. For the negative—George Sutherland, United States Senator from Utah, and Emmet O'Neal, Governor of Alabama; Frederick P. Fish, former President of the American Telephone and Telegraph Company; Charles F. A. Currier, Professor of History and Political Science, Massachusetts Institute of Technology.

MASSACHUSETTS BUREAU OF STATISTICS, Chas. F. Gettemy, Director.

Report of a Special Investigation Relative to the Indebtedness of the Cities and Towns of the Commonwealth. April 15, 1912. 286 pp.

Stating the scope and intent of the present law regarding municipal indebtedness in Massachusetts, and its failure to meet the situation; the purposes and periods for which debt may now be incurred; the statutory authority under which debt is incurred for current expenses; the limitation on the borrowing power for funded debt purposes; methods provided for the payment of debt (sinking fund and serial); the tax limit in cities. Recommending a complete revision of the law relating to municipal indebtedness and certain modifications of other statutes bearing closely on the subject. Besides tables and a debt statement for each city and town in the state, the appendix contains drafts of proposed legislation on the subject.

NATIONAL CHILD LABOR COMMITTEE.

Child Workers in the Tenements. 1912. 47 pp. Illustrated.

A vivid presentation of a serious problem that affects public health, legitimate standards of business interest, and the health, education and morals of little children, and should therefore be of deep concern to every citizen.

LOVEJOY, OWEN R., General Secretary, National Child Labor Committee.

Employment of Children on the Stage. (Pamphlet No. 180). 1912. 12 pp. Child Labor in 1912. Sept. 30, 1912. 25 pp.

UNWIN, RAYMOND.

Nothing Gained by Overcrowding. 1912. 24 pp. Illustrated. 10 cents

Arguing that "the greater the number of houses crowded upon the land, the higher the rate which each occupier must pay for every yard of it which his plot contains, the smaller will be the total return to the owners of land in increment value, and, indeed, the less will be the real economy in the use of the land." Presenting the argument by a study of two exactly similar areas of ground and working out the costs of development with the larger and the smaller number of houses to the acre.

ROCHESTER CHAMBER OF COMMERCE.

The Prevention of Accidents. 1912. 16 pp. Illustrated.

An enlivening resumé of common-sense ways of preventing accidents on streets and railroads, in the home and the factory. "Civilization is judged by the number of its accidents."

POWERS, L. G., Chief Statistician for Finance and Municipal Statistics, United States Bureau of the Census.

Uniform Accounts as a Basis for Standard Forms for Reporting Financial and Other Statistics of Health Departments. 1912. 16 pp.



TREE TANGLEFOOT

A HARMLESS, sticky substance applied directly to tree trunks. Remains effective rain or shine three months and longer, fully exposed to weather. One pound makes about 9 lineal feet of band. No apparatus required, easily applied with wooden paddle. Especially recommended against gypsy, brown-tail and tussock moth caterpillars, canker worms, climbing cut worms and bag worms, although equally effective against any climbing insect. TREE TANGLEFOOT needs no mixing, but is always ready for use. Do not wait until you see the insects, but band trees early and get best results.

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Manufacturers of Tanglefoot Fly Paper and Tree Tanglefoot.

Cage Tree Guards

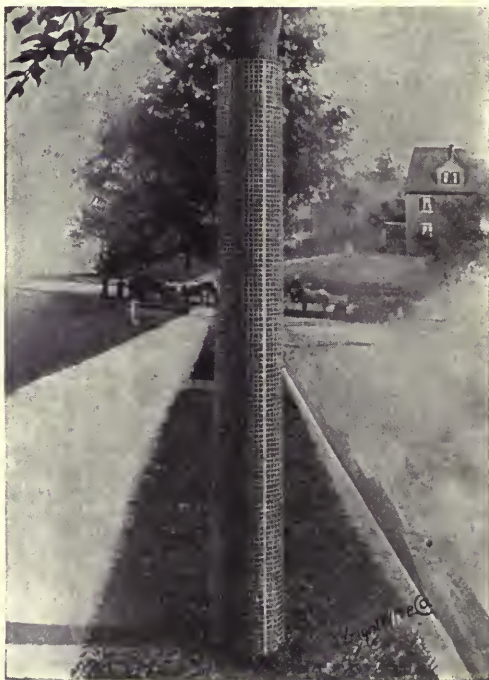
THE Excelsior "Rust-Proof" Tree Guards are made in three styles. The Cage pattern is illustrated herewith. While light and comparatively inexpensive, it cannot be beaten down or pulled out of shape. The fabric is reinforced at short intervals with flat steel rods—which are woven into the wire mesh. The entire guard is immersed in molten zinc, and so completely sealed against the action of moisture.

For parks, public or private grounds, always use Excelsior "Rust-Proof" Fences, Tree Guards, Trellis, Flower Bed Guards, Arches, etc. They are the best under all conditions, and the cheapest in the end.

Hardware Dealers Handle Them

Ask us for a sample of the "Rust-Proof" Coating, and a copy of illustrated Catalog "G."

Wright Wire Company
WORCESTER, MASS.



Opportunities for Trained Men in Public Service

Time was when well-educated men looked down upon public service. But times seem to be changing rapidly. Recently the Training School for Public Service asked one or two medical journals to note that a well-trained physician was wanted to prepare for public health management. As a result over 200 successful physicians expressed their desire to enter the service of the general public!

THE AMERICAN CITY asked one of the directors of the Bureau of Municipal Research, which is conducting the School, if other classes of men are wanted. Dr. Allen replied:

"We have more calls five times over than we can begin to fill, for sanitary engineers,

water department experts, efficiency experts, accountants, school investigators, budget exhibit experts, etc. We are always looking for high-grade men who either want to enter public service or, being in, want to increase their value."

Stipends are paid to men of experience, to cover expenses, running from \$500 to \$3,000 a year. Cities are invited to send local men to get the best of New York's experience and take back home. THE AMERICAN CITY will be glad to answer questions about this new field training. Or information will be sent directly from the School itself upon application to William H. Allen, Director, 261 Broadway, New York.

Conventions and Exhibitions

Housing Reform in New Jersey

An all-day conference of municipal officials and civic workers from the cities and towns of New Jersey is to be held in Newark on March 28. Plans for this meeting and for the formation at that time of a New Jersey Housing Association, were made at a conference held January 28, at the Essex Club, Newark. W. L. Kinkead, of Paterson, was made chairman of the organization committee, and Miles W. Bee-mer, of Jersey City, secretary.

+ +

American Society of Civil Engineers

At the annual meeting of the Society, held in New York on January 15, the following new officers and directors were elected:

President, Prof. George F. Swain, of Boston, Mass.; Vice-Presidents, J. Waldo Smith, of New York City, and C. H. Rust, of Victoria, B. C.; Treasurer, John F. Wallace, of New York City; members of the Board of Direction, Henry W. Hodge and James H. Edwards, of New York City; Leonard Metcalf, of Boston, Mass.; Henry R. Leonard, of Philadelphia, Pa.; Edward H. Conner, of Leavenworth, Kan., and Samuel H. Hedges, Seattle, Wash.

New England Water Works Association

At the annual meeting, held in Boston on January 8, the following officers were elected:

President, Mr. J. Waldo Smith, Chief Engineer, Board of Water Supply, New York City; Vice-Presidents, Messrs. Frank A. McInnes, Leonard Metcalf, William F. Sullivan, Millard F. Hicks, Caleb M. Saville and Samuel A. Agnew; Secretary, Mr. Willard Kent; Treasurer, Mr. Lewis M. Bancroft; Editor, Mr. Richard K. Hale; Advertising Agent, Mr. George A. King.

+ +

American Association for the Advancement of Science

At the meeting of Section D, Engineering, held in Cleveland, January 3, a program of thirty papers devoted to highway engineering and related subjects occupied the morning and afternoon sessions. The sessions were presided over by Professor Arthur H. Blanchard as chairman and Professor George W. Bissell as secretary.

On January 4 many of the engineers in attendance visited the plant of The Deckman-Duty Company, at which Dunn wire-cut-lug paving brick are manufactured. The inspection trip of the morning, which was made with automobiles, also



Power Spraying would have saved these trees.

This cut illustrates two of the several hundred beautiful elm trees killed by the ELM TREE BEETLE, in one of our largest University cities, because they were not sprayed.

Does a similar problem confront you?

If so, let us tell you about our method by which large trees may be sprayed for a few pennies each.

Among those using our HIGH DUTY sprayers are United States Department of Agriculture; United States War Department; United States Capitol Grounds; District of Columbia; Massachusetts State Forester; Massachusetts Metropolitan parks; Massachusetts Metropolitan Water and Sewerage Board; Cities of Boston, Albany, N. Y., Providence, R. I. and over 100 others.

We manufacture and sell over 90% of the HIGH DUTY sprayers used in the United States.

Catalog on Request.

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☛ Spraying for the ELM LEAF BEETLE with our Standard "A." United States Capitol Grounds.

included the examination of various sections of brick and stone block pavements in Cleveland. The tour of inspection was made through the courtesy of Mr. F. B. Dunn and the officials of The Deckman-Duty Company and the National Paving Brick Manufacturers' Association, who, on the preceding evening, entertained many of the engineers present at a dinner given at the Cleveland Athletic Club.

✱ ✱

Tennessee League of Municipalities Formed

For the purpose of promoting the general welfare of all of the municipalities of the state, there was formed in Nashville, on January 16, the Tennessee League of Municipalities. The following officers were elected:

President, H. E. Howse, Nashville; Vice-Presidents, T. C. Thompson, Chattanooga; J. M. Dedman, Columbia, and C. E. Griffin, Jackson; Secretary and Treasurer, J. W. Harton, Tullahoma; Executive Committee, A. B. Martin, Lebanon; R. L. Stockard, Camden; W. W. Archibald, Shelbyville; C. E. Hendricks, Harriman, and T. E. Thatch, Cleveland.

✱ ✱

Mayor's Society of New Jersey

At the annual convention of the Mayor's Society of New Jersey, held in Trenton, January 14, the following officers were elected:

President—Frederick W. Donnelly, Mayor of Trenton.

Vice-Presidents—Julian A. Gregory, Mayor of East Orange; George N. Seger, Mayor of Passaic; Joseph H. Firth, Mayor of Phillipsburg; Andrew F. McBride, Mayor of Paterson; Jacob Haussling, Mayor of Newark.

Secretary-Treasurer—Frank J. Murray, Mayor of Orange.

The conference adopted a resolution favoring legislation for the speediest possible elimination of railroad grade crossings throughout the state of New Jersey, under direction of the Board of Public Utility Commissioners and at the expense of the railroads. Another resolution advocated the filing of the names of mayors and city clerks with the Secretary of State after all municipal elections in future.

✱ ✱

Ohio Municipal League

Evidence of the stimulus to municipal activities which is already resulting from the home rule amendment to Ohio's constitution was afforded at Columbus on January 22 and 23. The occasion was the annual convention of the Ohio Municipal League, which brought together in an enthusiastic

gathering more than 200 city officials and civic workers from all parts of the state.

Under the home rule amendment three methods are provided by which Ohio cities and villages may adopt a form of government. A municipality may (a) continue to be governed by the present municipal code; (b) adopt any form of government enacted into law by the General Assembly of the state and subject to adoption by a municipality; or (c) elect a charter commission to frame its own charter. Suggestions for three optional forms of government were submitted to the League in the form of a pamphlet prepared by the Municipal Association of Cleveland through its Municipal Home Rule Committee. These received much discussion at the convention, and a legislative committee was appointed to consider certain changes and to submit the charters, when finally drafted, to the General Assembly. Of this committee Prof. A. R. Hatton, of Western Reserve University, Cleveland, is chairman.

Other subjects discussed by the League during the three sessions of its convention included taxation, civil service, and "Some Lessons from European City Government," an address on the last-named subject being made by Mayor Brand Whitlock of Toledo, who has recently returned from a first-hand study of British and German municipal methods.

No small share of the success of the convention was due to the ability of Mayor Newton D. Baker, of Cleveland, as the presiding officer, and to the intelligent arrangements for the meeting made by the League's secretary, Mayor Fesler.

The following officers were elected for the ensuing year:

President—Henry T. Hunt, Mayor, Cincinnati.

First Vice-President—Cornell Schreiber, City Solicitor, Toledo.

Second Vice-President—C. H. Spencer, Editor, Newark.

Third Vice-President—M. E. Gemunder, Secretary Sinking Fund Commission, Columbus.

Fourth Vice-President—E. G. Martin, Mayor, Norwalk.

Secretary-Treasurer—Mayo Fesler, Cleveland.

The Executive Board comprises:

C. H. Slaughter, Mayor, Athens.

W. S. Crandall, Dayton.

Brand Whitlock, Mayor, Toledo.

A. W. Mithoff, Lancaster.

T. W. Pape, Mayor, Lorain.

Newton D. Baker, Mayor, Cleveland.

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Ask
Us to Send
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Calendar and Di-
rections — **FREE.**

Our book on Spraying and Sprayers will be a great help to you. It tells you what spray mixtures to use, how to prepare mixtures, when to spray and how to spray to secure best results.

A Sprayer to Suit Your Needs

Our line includes everything from the small hand sprayer up to our famous **Royal Leader** sprayer for park or street work which will throw a spray to the top of the tallest trees. Write us to day for the valuable spraying information mentioned above.

FIELD FORCE PUMP CO
Elmira, N. Y.



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**BEFORE MAKING UP YOUR SEED ORDER
FOR NEXT SEASON BE SURE TO
KNOW ABOUT**

KALAKA Fertilized Grass Seed

It has special merit and quality that will recommend it to Park and Cemetery lawn makers.

Ask for valuable booklet and quantity prices.

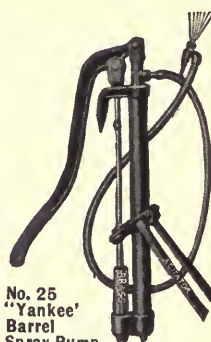
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Smith's Spray PUMPS

A Spray For Every Purpose

Forty different style sprayers to select from, for Tree, Garden and Shrubbery Spraying, White-washing, Disinfecting, etc. Hand and Compressed Air Sprayers, Bucket and Barrel Spray Pumps, also Dust Sprayers and Spray Nozzles.

D. B. SMITH & CO.
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WIZARD BRAND SHEEP MANURE DRIED AND PULVERIZED

unequaled for Park and Cemetery use. Best natural fertilizer for Lawns and Gardens. Trees, shrubs and vines

No Weeds
No Waste

Economical and
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Write for Booklet and Prices with Freight Rates.

THE PULVERIZED MANURE CO.
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Porcelain Enameled Iron Street Signs

Will not fade or tarnish

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The Only Indestructible Rust Proof Street Sign

EVERY REQUIREMENT
for the ideal street sign is included in the Indestructible Sign which we manufacture. Made of solid steel. No enamel or paint to wear away. No rust to make it unsightly. A sign that will be readable and attractive for a hundred years to come. Signs made to read vertical as well as horizontal in any size from 2 x 2 to 12 x 48 inches. Prices low and liberal discount for quantity orders. Let us send you a sample sign. It will prove the absolute supremacy of our proposition for your purpose. Illustrated printed matter mailed on request.

INDESTRUCTIBLE SIGN COMPANY, 101 SOUTH SCIOTO STREET
COLUMBUS, OHIO

SOME COMING EVENTS

FEBRUARY 26-MARCH 8.—CHICAGO, ILL.

Clay Products Exposition. Secretary, F. L. Hopley, 815 Chamber of Commerce, Chicago, Ill.

MARCH 3-5.—CHICAGO, ILL.

National Paving Brick Manufacturers' Association. Annual Meeting. Secretary, W. P. Blair, 824 Brotherhood of Locomotive Engineers' Building, Cleveland, Ohio.

MARCH 13-16.—NEW ORLEANS, LA.

Ninth Annual Conference of National Committee on Child Labor. General Secretary, Owen R. Lovejoy, 105 East Twenty-second Street, New York City.

MARCH 26-29.—NEWARK, N. J.

American Physical Education Association. Secretary, J. H. McCurdy, M. D., 93 Westford Avenue, Springfield, Mass.

MAY 6-10.—RICHMOND, VA.

Playground and Recreation Association of America. Annual Meeting. Secretary, H. S. Braucher, 1 Madison Avenue, New York City.

MAY 13.—BALTIMORE, MD.

American Association for Promoting Hygiene and Public Baths. Permanent Secretary, William H. Hale, Ph. D., Municipal Building, Brooklyn, N. Y.

NEWS *from the* MANUFACTURERS

METHODS
MATERIALS &
APPLIANCES

"The Conflagration Hazard in American Cities and the Water Curtain as a Cure"

This is the title of one of several interesting articles in the *Grinnell Automatic Sprinkler Bulletin* for January, 1913. Elsewhere in the same issue the statement is made that "you can't prevent some fires from starting, but you can prevent all fires from spreading." The object of the bulletin is to tell how. Among other features the January number contains a detailed record of 176 fires under Grinnell sprinklers reported during the three months ending December 1, 1912. Copies may be obtained on application to the Publicity and Promotion Department of the General Fire Extinguisher Company, Providence, R. I.

✦ ✦

A New Tandem Road Roller

A new type of road roller now being placed on the market by a manufacturer of established reputation is the Monarch tandem here illustrated. It is the latest product of The Good Roads Machinery Company, of Kennett Square, Pa.

In a new catalogue just published the design and construction of the new roller are illustrated and described. It is pointed out that many kinds of road and street work can be accomplished to far better advan-

tage with a tandem than with a three-wheeled roller; the tandem being particularly desirable in the construction of roads in parks and cemeteries, in the building of private drives, in the laying of asphalt pavements, and for patching work on rural roads and city streets.

The Monarch tandem roller is built in three sizes, weighing respectively 5, 8 and 9 tons. All sizes are equipped with both hand and power steering devices. The side and cross frames are constructed of steel channels of extra heavy section, the side frames being bent to the required shape in one piece and reinforced at the compression roll bearing by heavy steel plates. The boiler, placed near the rear roll, is of the vertical tubular type, said to be larger than the boiler on any other make of tandem roller of the same size.



MONARCH TANDEM ROLLER IN OPERATION

You Ought to See for Yourself

What Europe is Doing

Germany has long been noted for the efficiency of her municipal government, her city planning, her housing of the poor, her social insurance, her municipally-owned public utilities and her intensive use of inland waterways.

France is noted for the beauties of her capital, the philanthropy of her people, the success of her public works, her sanitation and public hygiene.

England is rapidly forging to the front with social insurance, with garden cities, with city planning and with a new brand of municipal democracy.

Holland, Belgium, Denmark and Scotland are doing things equally interesting and instructive.

These are things with which you ought to be personally acquainted. The tours which we have organized aim to study just these things. Let us send you fuller information. Address

DR. E. E. PRATT,
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Bureau of University Travel

Sow Your Lawn Grass

With the Right Tool
In the Right Way

The Velvetlawn Grass Seeder quickly establishes beautiful lawns by putting seeds where you want them in just the right way. It drills the seed into the ground evenly and covers it uniformly. Birds, wind and rain cannot endanger lawns at seeding time where this unique machine is used. Guaranteed to do satisfactory work.

Our Special Booklet Tells



Write now for booklet C, describing the work which the *Velvetlawn Grass Seeder* is doing for thousands of enthusiastic users. This is the only inexpensive seeding machine founded upon thoroughly practical as well as scientific principles. Write for booklet and pricelist to-day.

Velvetlawn
Seeder
Company
Springfield
Ohio

Barren Land ^{WILL} NOT Produce Crops

So the logical way to be permanently rid of weeds is to make the land barren.

"HERBICIDE"

The Weed Exterminator

Not only kills Grass and Weeds of every kind, but makes the land barren by destroying those elements which are essential to plant life.

For destroying Grass and Weeds of every kind on roadways and in gutters, the use of "HERBICIDE" is the most practical and economical method, as one thorough application does the work.

Think what a saving in cost of labor alone this means when compared to the old method of sending laborers over the ground every few weeks to clear the roads and gutters of grass and weeds by the pick and shovel method.

One Barrel (50 gals.) of "HERBICIDE" makes 2000 gallons of strong and effective treating liquid when mixed with water.

Application is made by means of sprinkling apparatus of any kind.

Used and endorsed by hundreds of Cities, Parks and Cemeteries.

Write for quotation and further information.

THE READE MFG. CO.

1021 Grand Street

Hoboken, N. J.

"The Lawn—Its Making and Care"

Under this title a 16-page booklet has been issued by the Supplee Hardware Company, of Philadelphia. It is described as "a little dissertation on grass and mowers, with the necessary *hows* and *whys*." This booklet may be secured for the asking, as may also the company's 1913 catalogue, illustrating and describing the various models of Pennsylvania lawn mowers, grass catchers, lawn cleaners, etc.

+ +

Septic Tank Patents

The fact that the United States Supreme Court has not sustained the contention of the Cameron Septic Tank Company in the so-called Knoxville case, is claimed by that company to affect only the city of Knoxville, Ia. The company states: "Our fundamental position has been, and is, that as a matter of fact none of the foreign patents cover the *Septic Process*, but merely certain *apparatus*, and it is therefore wholly inconsequent whether the foreign patents have expired or not, and our United States patent, being for the process, is still in force, and will continue so to the end of its seventeen-year term, October 3, 1916."

+ +

Additions to the Firestone Tire Sales and Advertising Departments

George J. Bates has recently connected with The Firestone Tire & Rubber Company, having charge of the sales in the pneumatic tire department. As many of his numerous friends in the trade know, Mr. Bates has occupied for the past five years the position of a department manager with The Diamond Rubber Company. Mr. Bates will continue his residence in Akron.

Roy G. Harris, for the past three years in charge of sales and publicity for the Vreeland Chemical Company, of New York, and previously for several years connected with the Grasselli Chemical Company, of Cleveland, has recently joined The Firestone Tire & Rubber Company. Mr. Harris's position will be that of assistant advertising manager, with headquarters in Akron.

+ +

Reducing the Wear of Hose Lining

Fire hose to serve its purpose must be reliable in time of need. The necessary storing of the hose in a flattened position, waiting the next call for service, causes the rubber lining to deteriorate very rapidly at the two points of fold. In fact, the jacket often does not receive more than one-third of its full wear before the rubber lining fails at the places indicated, and the section disappears from the fire department, usually to the street or sewer department.

The Bi-Lateral Fire Hose Company, of Chicago, claim that in its patented construction this trouble has been remedied. The rubber is left free from the jacket at the points of fold, thus relieving the compression by allowing the rubber to curve in at both sides when the hose is flattened.

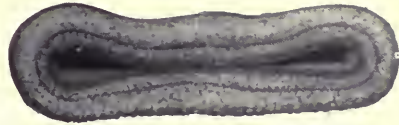


FIG. 1



FIG. 2

Fig. 1 shows the usual manner in which hose is carried or stored. In Fig. 2 the condition of the rubber lining with the Bi-Lateral construction is shown, illustrating how much closer the hose will flatten without injury.



FIG. 3



FIG. 4

If a sample of hose 1 inch wide is taken, and the rubber lining separated from the fabric (Fig. 3) for about an inch, and then folded, as shown in Fig. 4, it can be readily seen how



FIG. 5

much of the rubber, were it fastened to the jacket, would have to compress or condense at the point of fold. The result of stretching back in the old-style hose is shown in Fig. 5.

C. & J. AMERICAN PEDIGREE CANNAS



MRS. ALFRED F. CONARD—The most wonderful Canna in existence. This bed was planted on the grounds of the Department of Agriculture, Washington, D. C.

YOU HAVE HEARD ABOUT C. & J. CANNAS AND READ ABOUT THEM, BUT HAVE YOU TRIED THEM?

The U. S. Government uses C. & J. Cannas extensively for beautifying the grounds of the Nation's Capitol. Fairmount Park, Philadelphia, the Baltimore and Chicago Parks, and owners of large estates, buy from us. **YOU RUN NO RISK** when you follow leaders like these. Our interesting book on Cannas is free. Send for it before planning your summer beds.

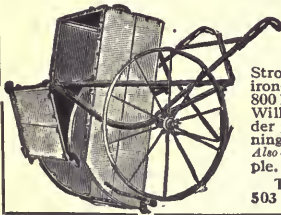
THE CONARD & JONES CO.

ROSE AND CANNA
SPECIALISTS

West Grove, Pa.

Saves Time and Labor

The Witten goes anywhere—handles any material. You load—it dumps automatically. Can't get out of order. Has many farm uses. Does work of extra man.



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A Rundle-Spence Fountain

One of the many styles of drinking fountains designed by the Rundle-Spence Manufacturing Company, of Milwaukee, Wis., is here shown. It is made of cast iron, with N. P. brass bubbling head, dog basin and self-closing faucet for drawing water in pail for horses. The



RUNDLE-SPENCE FOUNTAIN NO. A-128

fountain measures 3 feet in height, the oval basin being 20 inches by 14 inches and the octagon base 18½ inches in diameter. The fountain can be equipped with either one or two bubbling heads, with or without self-closing valves.

† †

An Important New Paving Material

A paving material which is expected to play an important part in the future of American road building is now being placed on the market. It is known as Fibred-Asphalt, and is the invention of George A. Henderson, of St. Albans, W. Va., President of the Fibred-Asphalt Paving Corporation. The new pavement consists of wood fiber mixed with asphalt in proportions of about 84 per cent to 16 per cent of volume, respectively, and in the opinion of the inventor will furnish commercial use for

the waste material of extract manufacturers, aggregating more than 5,000 tons daily.

Mr. Henderson's claims, as covered by a patent issued October 8, 1912, relate not only to the method of laying the pavement, but also to the process of denaturing wood, restoring it to its original density and consistency, and thoroughly preserving it. The following extracts from a letter written by him last month are of special interest:

"The fiber is not of bark, but it is pure hardwood fiber. A billet of wood is shredded into small particles, and these particles are denatured by the process of extracting all sap, essences and softer portions of the wood by the tannin manufacturers. The remainder, heretofore considered a waste material, is the hardest, though resilient, sinews of the wood, which, by reason of the extraction therefrom of the sap, etc., are rendered not only porous, but abnormally enlarged. The fiber is thus susceptible of becoming impregnated to its most minute pore by *absorption* with a non-deteriorable, non-evaporable matter, such as asphalt.

"In paving the fiber is rendered impervious to moisture by the binding and impregnating asphalt; the un-uniform particles of fiber interknit and interlap, and, in addition to being surrounded by the binding asphalt, the asphalt penetrates the particles, thus insuring a firmer bond than with sand and stone. The fibers, in their raw state, on account of their nature and resiliency, are tougher than stone. When bound and preserved in their contracted state they are practically indestructible.

"My first step will be the construction of a complete permanent plant at one of the extract mills either in Tennessee or Alabama. The plant will consist of a series of screens of the shaker type, onto which the fiber from the extract leaches will pass after having been thoroughly dried in vacuum dryers. From the screens, by endless belt conveyors, the various sizes of fiber will be mixed in a revolving heater, passing hence to a mixer, where the particles of fiber are agitated and mixed with the asphalt, emerging into large molds, 4 by 6 feet, in an uncompressed state. These molds are designed to compress this fiber so as to form a crust about 3½ inches thick on all sides of the block. The block is then removed from the mold and allowed to cool, when, without crating or bagging, it will "stand up" and is ready for shipment, to be deposited at convenient intervals along the roadway. Here it is taken aboard the portable reheating machine, where it is broken up and heated to about 200 degrees F. The abnormally enlarged pores in the fiber are thereby caused to contract about 40 per cent., and are impregnated to their core with the asphalt.

"From the rear of the machine the fibred-asphalt emerges in a continuous flow 1½ feet in diameter onto the previously constructed and prepared road base, on which the material is mechanically spread 4 inches thick, uncompressed, as the portable machine moves forward. This machine is followed by hand-rakers, who touch up the mass in places wherever necessary, and is immediately followed by a 5-ton steam roller, which roller is immediately followed by 10-ton rollers, which



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Sewer Pipe, Conduit, Fire Proofing and other displays which are particularly interesting to you will be most complete.

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The Clay Products Exposition Company, 815 Chamber of Commerce Building, CHICAGO



A WHEELBARROW LOAD OF FIBRED ASPHALT

A completed section of road paved with this material is shown in the foreground

operate on the mass until about cool. Before the 10-ton roller is used sand is spread over the surface in a very thin sheet, and after the passage of the 10-ton roller thereover the roadway is ready for traffic."

Experimental sections of fibred-asphalt pavement were laid on the St. Albans Road in the summer of 1911. The satisfactory results of these tests, and of more recent demonstrations

elsewhere, are said to have convinced many road-building experts of the exceptional value of Mr. Henderson's invention. The accompanying illustrations are reproduced from two of eleven photographs taken in Memphis, Tenn., during the last week of November, 1912, preliminary to the paving of 22 miles of the Memphis Country Club's road with fibred-asphalt.



FIBRED ASPHALT IN PROCESS OF COMPRESSION UNDER FIVE-TON ROLLER



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VOLUME VIII

NUMBER 3

The American City

NEW YORK
MARCH,
1913

Editorial Comment

A Novel Plan for a State Bureau of Municipal Information

The Mayors of the cities of New York State have before them for official action a plan for the establishment of a State Bureau of Municipal Information. After a study of the methods used by various cities for the securing of municipal data, a committee appointed at the last New York State Conference of Mayors and Other Municipal Officials has drafted a plan for serving efficiently the needs of all the cities in the state at a comparatively small cost.

This committee, in its search for information, found that the cities in some of the states are being supplied with municipal information either through a bureau run by a state organization of cities or by some department of the state government, usually the State Library. An analysis of the work of these two distributing agencies brought to light some interesting facts.

Without a large operating fund it is impossible for a bureau to give the prompt and effective service needed by municipal officials in the multiplicity of problems they are called upon to solve. The first requisite of such a bureau is a large reference library; and to establish and maintain this requires more money than the cities in any state are apparently willing to contribute at the present time. To be of real value, such a library must be kept constantly up-to-date by securing the latest municipal literature and recording the more important municipal activities, and the cost of operating it must, therefore, include the employment of a competent staff of researchers.

While the bureaus operated by certain

states are better equipped and more efficiently manned than those maintained by groups of cities, they do not seem to be doing much better work than the bureaus under city control. An analysis of the situation shows that city officials prefer to deal with other municipal office-holders rather than with state departments, when seeking light on city problems. There seems to be a decided lack of coöperation between state bureaus seeking to give municipalities helpful information and city governments needing such information. Indeed, the spirit of home rule appears to be an unsurmountable obstacle to the effective working of an information bureau operated under the direction of a state.

In the light of such knowledge, the representatives of the New York State Conference have devised a plan which it is believed will eliminate the weak points in the two systems described above, while retaining all of the good features of both. The committee proposes that the New York bureau be operated by the cities through the Conference and in coöperation with the State Library. It estimates that the cost of operation the first year will be a little less than \$5,000.

The scope of the proposed bureau is as follows:

1. To gather information and statistics relative to municipal problems and improvements and to distribute them among the officials of the cities of the state.
2. To keep all municipalities informed about bills introduced into the legislature and newly-enacted laws affecting the cities.
3. To furnish to any city upon request all available information or statistics relative to any municipal activity indicated.
4. To keep municipal officials of the state

in touch with each other by distributing among them any new plans devised by an official of any department.

5. To keep officials informed as to the progress of all municipal innovations thus reported to them, so that they may know of their success or failure.

6. To distribute such reports and other literature relative to municipal government and activities as will aid municipal officials.

Supervised by a council of five Mayors and directed by a small paid staff, the committee believes that no serious attempt can be made to divert such a bureau from its true purpose to serve personal, political or factional ends; nor will a bureau of this kind appear in the role of dictator to officials, as one operated by the state or under the auspices of any outside organization, under certain conditions, might. It will be coöperative—never pedagogical nor dictatorial. At the same time it will have at its disposal the large and valuable reference library of the state and the facilities for thorough researches thus afforded. It is pointed out that under the proposed plan the state should also be a gainer, for the Bureau would contribute to the Library all municipal literature collected by it.

Proposed Method of Financing

The Bureau when established will be supported by the cities receiving its services. The amount each city shall pay is to be determined by the class to which it belongs. To defray the expense of establishing and operating for the first year, the committee proposes that the following assessments be levied: First-class cities (population over 175,000), \$275 each; second-class cities (population less than 175,000 and more than 50,000), \$175 each; third-class cities (population less than 50,000), \$100 each. In support of this financial plan the committee says in its report:

"The plan of organization is centralized, simple and effective. It permits representation according to class and also individual representation, so that favoritism to any one class or any one city is reasonably impossible.

"We believe that the plan of financing the bureau should be fairly elastic, especially until such time as the full needs become known and the services developed accordingly. We believe that the equalization plan will prove as satisfactory in connection with the bureau as it has in the administration of county affairs. We call your attention to the fact that the scope of the bureau provides for two kinds of service—general and special. The amount of

general work will be the same for all cities. The special work will depend upon individual requests, which will be regulated by individual needs. The committee believes that it has been fair in assuming that a city's needs, as far as they can be supplied by the bureau, will be in proportion to its population. For these reasons, therefore, we have preferred to recommend that cities be taxed according to class rather than to the general plus the amount of special service rendered."

The New York State Conference of Mayors meets annually to discuss important municipal problems, the latest advances in municipal improvements and any recommendations that may be made by experts in various municipal activities. A bureau of municipal information organized as suggested by the New York committee should strengthen the work of the Conference and the individual efforts of municipal administrations by supplementing the information obtained at the annual gatherings with data in relation to practical demonstrations of theories and remedies.

The expenditures involved would, of course, be justified only if the information thus made available were really used by a considerable percentage of the municipal officials of the state. This, perhaps, would not be the case during the first year or two of the bureau's existence. The time is coming, however—and the establishment of the bureau will hasten it—when municipalities will depend much more generally than at present upon expert advice and knowledge gained through the experience of others. Most of the municipal blunderings of to-day result not so much from a lack of available information as from the failure of many public officials to approve even small expenditures for the securing of such facts and applying them to local conditions.

The tenure of office of the average city official is so short and the problems with which he has to deal are so many and so complex that he has insufficient time to devote to the serious and intensive study which each of them demands. An exhaustive personal research of any one must necessarily mean the neglect of some other. With the aid of a bureau operated by the cities themselves and coöperating with a valuable State Library such as that at Albany, municipal efficiency in every line should be increased and the financial resources of the cities more effectively conserved than would otherwise be possible.

ENGINEERING IN CITY PLANNING

A Series of Articles, the First of Which Appeared in *THE AMERICAN CITY* for January, 1913*

Street Fixtures and Furnishings

Suggestions of Value to American Cities and Towns,
Gained from European Practice

By Frank Koester
Consulting Civic Engineer

THE impression of a city which its visitors and residents receive is dependent, far more than is popularly supposed, upon the appearance of its streets—that is, the street surfaces and fixtures, as considered apart from the buildings.

In order that streets may have the best possible appearance, they should be constructed by competent and experienced engineers, and when in use must not be allowed to deteriorate. Repairs should be made at the slightest sign of a break. If the repairs are neglected, the breaks become rapidly larger, with injury to the appearance of the street and a quickly mounting increase in the cost of making repairs.

The point of view of the average American toward city streets is largely responsible for the bad conditions which so generally prevail. The American seems to regard streets as a sort of necessary evil, and their repair as a more or less superfluous expense. He seems to feel that as only one vehicle at a time passes over a hole, a little care on the part of the driver would save the city the expense of the repairs.

Nevertheless, no municipal expense is much better repaid than that of keeping the streets in a thorough condition of repair. With good streets, drivers make much better speed, greater loads may be carried, and the wear and tear on the vehicles is greatly reduced. Accidents and breakdowns are obviated, with consequent saving of expense to vehicle owners, and the streets are much more readily kept in a clean and sanitary condition. Americans have, in reality, little or no conception of the condition in which a street should be maintained until they have seen the remarkably smooth and clean streets of European cities.

One of the unmitigated evils suffered in America is the constant tearing up of streets for the purpose of laying pipes of various kinds. In streets properly designed, the piping system for gas and water and conduits for electric cables should be provided of ample capacity, with a sufficient number of side outlets to take care of future connections. In large cities it is advisable to have tunnels, which may be arranged to contain all the water, gas and steam piping, pneumatic postal tubes, lighting, power, fire and police and telephone

* Copyright, 1913, by Frank Koester, New York.

cables, and also, beneath the floor of the tunnel, a sewer. Such a general service tunnel, while expensive in first cost, amply repays the city as well as the owners of the abutting property.

As a general rule, the surfacing of American streets is without adequate foundation, and the curvature is too slight, which allows water to remain and evaporate, instead of running off quickly.

Unnecessary Minor Obstructions

One of the greatest defects of American streets consists in their being defaced by a multitude of minor obstructions, extending from $\frac{1}{2}$ to 1 or 2 inches above the surface—such, for example, as the extremely numerous and poorly fitted manhole covers of sewer and electric cable pits and underground trolley channels; protruding gas and water-valve caps, and the poor junctions of the street railway rails with the street surfacing. The smooth surface of the street is thus destroyed, the cost of cleaning and flushing increased, and danger and interruption to traffic and wear and tear on vehicles greatly augmented.

The discharge openings of the gutters to the sewer pits are often badly constructed, and unsightly and dangerous in the extreme. The holes are so large that it even happens sometimes that children fall into them and are drowned. Such openings need not be placed exactly at the corner, and the street immediately before them need not be sunk so sharply; instead, an easier grade should be provided, and the openings protected by well-designed gratings with a clearance between bars of not more than $1\frac{1}{2}$ inches.

It is advisable in the streets most used for promenading to have iron or steel gutter covers at crossings, the width of the sidewalks, both for the main street and for the side street, thus affording a smooth promenade from block to block.

What has been said with reference to the appearance of the streets is equally applicable to the appearance of the sidewalks. It is even more important that they should be as smooth as possible, and entirely free from obstructions of every character.

Some European Regulations

Regulations of the following nature are in force in many European cities, and while some of them may appear radical to those

unfamiliar with the question, they have all proved in practice to be of the greatest utility.

Curbstones should not be more than 6 or 8 inches above the abutting roadway. The corners of the sidewalk should have an easy radius of not less than 6 feet. The sidewalk should have a gradual slope toward the street, and should be as smooth and uniform in material as possible.

Manhole covers in the sidewalk should be exactly flush with the sidewalks at their edges, and should not rise more than half an inch at their centers. They should be entirely free from spikes, rivet heads and sharp corrugations, and if there are corrugations and projecting points, their upper surface must be not less than one-third of the total area of the cover.

No open gratings whatsoever should be allowed, either for purpose of lighting or ventilation. This regulation should be enforced against municipal subways as well as against private owners. Its necessity cannot be too strongly emphasized, because there is a growing tendency to discharge foul and hot air, dust, odors, etc., into the faces of pedestrians, a practice that is peculiarly disagreeable to women, and one which would not be tolerated half an hour in any German town. Neither should such gases and foul air be discharged from openings in the walls of the buildings toward the sidewalk. The only proper method of such discharge is through shafts or chimney to the roof and carried up a suitable height.

No steps leading either upward or downward from the sidewalk should be permitted outside the building line, and no railings of any kind should be permitted on the sidewalk.

No showcases or obstructions of any kind should be permitted on the sidewalk. No window exhibits or demonstrations should be permitted of such a character as to collect crowds of curiosity seekers in the street and thus obstruct traffic.

No elevators from basements should be permitted to open on the sidewalk, but should open in recesses in the sides of the building.

The placing of temporary bridging or planking from trucks in the street across the sidewalk to the building should be prohibited. This is an abuse that is particularly practiced in American cities, and



AN UP-TO-DATE THOROUGHFARE IN DUSSELDORF



THEATERPLATZ, DRESDEN, SHOWING ELECTRIC CAR LINE SIGN POST, AND, IN THE DISTANCE, THE ORNAMENTAL CHIMNEY OF A MUNICIPAL HEATING PLANT

pedestrians must constantly take to the streets to get around these wagons. It should be obviated by constructing recesses in the building into which the trucks could be backed for unloading or by the use of interior wagonways, courts or yards. The sidewalk at the point of entrance of such wagonways should not be depressed at the curb, but removable cast iron or steel gutter plates should be provided to enable the trucks to get in from the street.

The use of the street for loading and unloading mail wagons also proves a serious nuisance. The Government has no right whatsoever, in the conduct of its operations, to obstruct the public highways in such a manner, any more than has the business man. The Government, indeed, sets a bad example and is the more reprehensible. Mail should be loaded and unloaded in courts.

Express companies are old offenders in the use of the sidewalks as freight sorting stations, but in certain cities they have been compelled to adopt the plan of courts and interior wagonways.

When Buildings are Being Erected

In the construction of new buildings the use of the sidewalk should be preserved to the public for at least half of its width, and for the remainder, which is occupied by the builders, a rental should be paid to the city. A further rental should be paid to the city for the storage of building materials in the streets, such as sand, stone, etc., and for the use of the streets for mortar beds and hoisting engines.

When platforms over sidewalks are required they should in no case be higher than three steps, or 2 feet above the sidewalk level, while the rental for the second and third steps should be progressively higher. In large cities especially, the continual erection of new buildings proves a source of the greatest inconvenience to the public, and renders the streets unsightly and dangerous. It is customary to erect a heavy bridge over the sidewalk, along the frontage, and this remains a fixture for from three to six months or more. As soon as it is removed, another appears somewhere in the neighborhood, and a chronic condition of disturbance is the result. Such temporary structures may with little expense be made of a decorative nature, instead of being left spots of ugliness. The

timbers should be dressed and painted, and corners fitted in a neat manner, the roof tight and the whole finished with lattice work painted green, or some other such decorative treatment given. Large advertisements should not be permitted, but a small one, stating the name of the building or purpose for which it is to be occupied, may be permitted. Such a plan of treatment has great advertising value and disposes the public favorably to the whole undertaking. It is a paying proposition. At the suggestion of the Municipal Art Commission it is being voluntarily adopted to a considerable extent in New York City. It should, however, be a matter of law, as the unsightliness of building operations is a nuisance to the public and a distinct loss to the merchants of the neighborhood. During such operation certain classes of building materials stored and in use and rubbish being removed should be wetted down to prevent dust.

Fire Hydrants, Letter Boxes and Street Signs

Fire hydrants, especially in prominent streets, if not placed against the building wall, should be sunk below the surface, not only for the sake of the appearance of the street, but to obviate danger of freezing in winter. Covers for such hydrants should be flush with the sidewalk, and properly marked. Objection may be made that in case of fire such hydrants would be difficult to find, but this is overcome by signs placed on the buildings, directly over the hydrant in the form of a red "H," and by other signs intermediate, with arrows pointing both ways, stating the distance to the fire hydrants in either direction.

Letter boxes should be placed on the houses instead of on posts, and should be provided in ample numbers and painted a noticeable color. In Germany they are painted a golden yellow.

The names of streets should preferably be placed on the corners of buildings, and each of the four corners should have the names of both streets. This is a cheaper and more effective method than the placing of signs on posts, which obstruct the sidewalk, and which, owing to the expense, are usually only placed on two of the corners, diagonally. The post method is, however, at times a necessity.

When electric light posts are placed on

the corners, a good form of street sign consists of a frame of four sides, carrying the name of the streets, two sides of the frame being parallel and the other two sides converging inwardly, the shorter parallel side, about 12 inches long, bearing the name of the main street and facing that street, while the long parallel side bearing the same sign is turned toward the sidewalk, and is clearly visible to one approaching along the side street. The name of the side street is

tels, churches, restaurants, drygoods stores and private hostesses. If desired for permanent uses on hotels, stores and the like, they should be permanent structures of appropriate design, without advertisements, and carried from the building itself. Marquises for windows should in no case be less than 8 feet above the sidewalk.

Advertising signs, or signs of any nature, should not project from the building unless at least 12 feet above the sidewalk, and in



A STREET IN BERLIN

Showing central promenade, well-tended flower beds, and outer traffic ways

placed on the two converging sides, and therefore more clearly visible from street cars than if placed at right angles. The placing of such signs on lighting posts enables the street names to be seen readily at night.

The combination of a white letter on a blue ground has proven to be the best arrangement of colors.

Awnings and Advertising Signs

No temporary stanchions for awnings should be permitted on the sidewalks, or awnings or canopies erected, leading from the building to the curb, as is done by ho-

no case should they project more than 3 or 4 feet. Any other method is unsightly and dangerous, while no useful purpose is served by the senseless competition in signs which result when no regulations are enforced. No building should carry any sign except that of the business conducted in it, and the size and design of large signs on the tops of buildings, of a permanent or semi-permanent nature, should be approved by the city art commission.

Where overhead trolley systems are used, the trolley wire should be carried from the lighting posts or from buildings, avoiding separate poles wherever possible. Where



TYPICAL NEWSSTAND IN BERLIN, WITH MUNICIPAL CLOCK

Note the mosaic paving

poles are necessary they should not be merely dressed trunks of trees, but standards of appropriate and ornamental design.

Shade Trees

The cultivation of shade trees has proved very advantageous in European cities. Not only do trees, in affording shade, increase the attractiveness of the street; they also reduce the amount of flying dust and temper the winds, improve the air and conduce to the healthfulness of the city. Shade trees should be planted from 2 to 2½ feet back from the outside edge of the curb, and an earth surface of from 2½ to 3 feet in diameter left around the trunk for natural watering. In addition to this, a desirable method of watering is that of gutter seepage, a hole being cut in the curbing, protected by a grating, and the water finding its way through the earth to the tree roots.

In some European cities waste paper baskets of meshed wire are placed at intervals around the trunks of trees and the bases of lighting poles. The bottoms of such baskets are some 2 feet above the surface of the street, and the tops 2 feet or so higher. It is the duty of the police and of the individual citizen to see that no garbage is thrown on the sidewalks or into the streets, since the baskets, being conveniently placed, afford a place for such rubbish.

In wide streets in which vehicular traffic is heavy, so-called safety isles should be placed to facilitate crossing. Such isles should be edged with granite curbing, some 6 inches above the crown of the street, and should be about 4 feet in width and of suitable length. They may be placed at the side of the street car tracks or in the center of the street, and added prominence may be given to them by

Advertising Columns, News Kiosks and Municipal Clocks

Pictorial advertising on a large scale on the streets is not favored abroad, where the advertising is confined either to newspapers or to small artistic posters placed on special columns, some 3 or 4 feet in diameter, each of which carries a dozen or more posters. The effort is to attract attention rather by the artistic effect of a poster than by its size.

Such advertising columns may with advantage be placed on safety isles, or in public squares or at spacious corners. The interiors of such columns are fitted with switches or transformers of electric distributing systems, or telephones for the police or fire department.

For purposes of public convenience news kiosks of an artistic design are placed in

suitable locations. There may also be display advertisements on the news kiosks.

At important focal points are placed small structures for supplying meteorological information. On the outside, weather charts and forecasts are displayed, and thermometers and barometers with continuous records of their fluctuations are provided. Condensed time tables of arriving and departing trains and vessels are shown.

An additional feature found in such structures and throughout European cities, of great convenience to the public—and one which would prove of

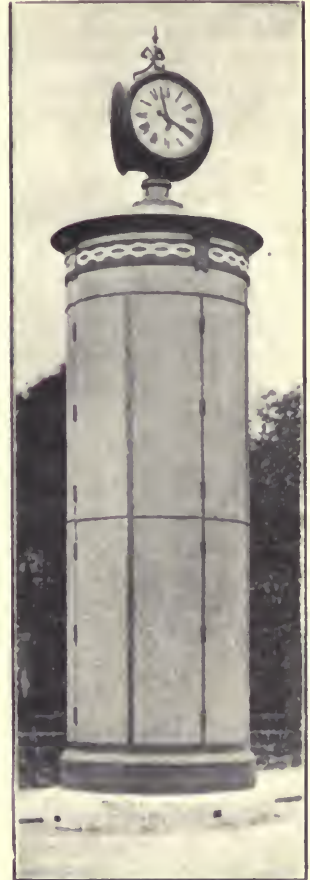
even greater convenience to the American public if placed in similar locations—is the electric clock. Not only on the meteorological stations are such clocks placed, but also at every few blocks at some convenient location. Such public clocks are electrically controlled and operated from a central point. They are attached to lighting poles, news and subway kiosks, advertising columns and in whatever location or position they will prove of the greatest convenience to the public. Four typical styles of such clocks are illustrated on this and the preceding page.



Electrically-operated clock on its own pillar



Lighting standard, trolley wire carrier and clock support all in one



Three-dial clock with column for advertisements

WHAT TO DO AND HOW TO DO IT

A Series of Twelve Articles to Run through 1913, of Which This is No. 3

How to Start a Survey of Your City's Business Methods

By William H. Allen

Director, New York Bureau of Municipal Research

THE first important step is to want the right kind of survey; *to want the truth and the whole truth*; to want to *help via co-operation*; to want to *have permanent results follow the surveys*, and to want to begin where your city has keenest interest.

It is not necessary to begin with the whole problem. On the contrary, the best survey starts with one or more specific questions and follows those back to the general problems which they index. My colleague, Dr. Cleveland, Chairman of the President's Commission on Economy and Finance, always says when asked what accounts or service records or surveys will do: "They will answer questions. If you have no questions they won't help you very much."

The village of Dobbs Ferry, N. Y., wanted to know why certain health work and school work could not be paid for out of taxes. Out of that want grew a hurried survey and a budget exhibit and a comprehensive program for village development all along the line, which has stimulated numerous other small cities and numerous other village societies to similar action.

The Associated Charities of Syracuse wanted facts about charities efficiency. Out of that desire grew a city-wide study of the charities department, schools, health department, methods of accounting and reporting, etc.

Ten men in Waterbury, Conn., wanted to find out whether the city's accounting methods were adequate. Out of that want grew a city-wide survey of accounting methods, police department, schools, charities, public works, budget making, etc.

In a Southern rural community a gentleman, who desired a fact basis for an educa-

tional foundation he was about to establish, had a survey made of nine rural schools in the vicinity of the site chosen for his experiment—a survey which may result in coöperation between his foundation and a number of rural communities much in need of educational leadership.

Atlanta's Chamber of Commerce wanted a fact basis for intelligent coöperation with city officials in deciding upon the large policies of development certain to confront that rapidly growing city. Out of their want grew a city-wide survey with statements of fact, constructive suggestions regarding the following departments: Construction, fire, police, water, park, sanitary, health, buildings, weights and measures, licenses, purchase of supplies and materials, payment of claims, bank deposits and treasurer's balances, bonded debt, collecting and assessment of taxes, budget methods, central control, public schools.

The St. Louis Voters' League wanted facts for intelligent consideration of charter needs. Out of this grew a survey of accounting and reporting methods, water department control, etc.

St. Paul Anti-Tuberculosis Committee wanted facts about ways of improving the health department's work against tuberculosis. Out of that want grew a constructive study of all phases of health department efficiency, because of the contact between health department and schools. There grew next a demand by a group of young St. Paul business men for the fact basis for coöperating with the public schools, which resulted in the school inquiry now in progress.

The Socialist administration of Milwaukee wanted a fact basis for beginning to redeem its pledges of efficiency. Out of that

grew a city-wide survey and a bureau of economy and efficiency.

Governor McGovern of Wisconsin wanted a fact basis for redeeming his pledges. The State Board of Public Affairs of Wisconsin began a state-wide survey of every activity upon which state funds were spent, including the public schools.

More recently Governor Cox of Ohio wanted to turn the eyes of his state toward improvement first of rural schools. Out of that, want grew a state-wide survey of rural and normal schools.

A newspaper editor of Newark, N. J., wanted to know how to get some large public questions settled permanently. With a group of business men he asked for a city survey of accounting methods, public works, water department, health department, etc.

The Woman's Club of the Oranges wanted to find a basis for coöperation of public-spirited citizens in the four Oranges. The inspiration basis of this coöperation was furnished by a largely attended meeting, at which were present Governor Wilson, Rabbi Wise, ex-Senator Colby, etc. A fact basis was provided by a city-wide survey. Out of that want grew a four-Orange survey of all departments except schools. They are now organizing a budget exhibit.

The Mayor and Council of Montclair wanted a fact basis for redeeming their pledges. They called for a city-wide survey and a constructive program which gave to Montclair methods of showing promptly to officials and taxpayers what was being done with public funds.

Wanting to do something for the whole of your city by *improving the whole city's business methods* is then the first step in starting a survey.

Eleven Steps Suggested

After being sure that you have some question that needs to be answered, the following steps are suggested:

1. Bring together six or ten or twenty business men or business women or enlist an influential organization to see with you the importance of answering this first question and of working answer by answer back to constructive remedy.

2. Get the money or the men necessary for a preliminary survey—a local man well trained in public service, if possible; otherwise a per-

son or persons who realize that facts are invaluable and opinions valueless and that information, rather than philosophy, is the foundation and superstructure of "reform."

3. As to coöperation of the official or officials involved, state your purpose to submit the facts, criticisms and recommendations to all officers whose work is described before publication. If coöperation is refused, *exercise your citizen right* to examine official records. The time has gone by when an official, no matter how honest, should stand between the community and the facts about his stewardship.

4. Set your agent or agents to work, always giving them a note of introduction and credentials to officials, each letter reiterating the purpose of your survey.

5. Make no public statements at all, except of your purpose, until facts are obtained and tested. Require your agent or agents to formulate a report which will state first:

- a. Ground covered and methods used, coöperation received.

- b. Facts found, including evidence of "factors which make for progress or efficiency" (see our Wisconsin school, Atlanta health, Waterbury school survey reports, etc.).

- c. Criticisms disclosed.

- d. Constructive remedies proposed.

6. In formulating criticisms and constructive suggestions, try to accomplish what is suggested by the following plan used in our report on organization and administration of the city government of Atlanta:

- I. Defective conditions easily corrected by slight improvements in administration.

- II. Defective conditions easily corrected without reorganization, but requiring ordinance authority.

- III. Defective conditions easily corrected, but requiring reorganization for which ordinance authority is necessary.

- IV. Defective conditions easily corrected, but requiring reorganization for which statutory enactment is necessary.

- V. Defective conditions easily corrected, but requiring increased appropriations.

- VI. Other conspicuous opportunities confronting Atlanta's city government (exclusive of health and education).

- VII. Immediate next steps for Atlanta's city government.

7. In a brief survey not all of the above will be needed. Sometimes the statement of fact and criticism can be put in one division and the remedies separately, while again the fact criticism and the remedy can be stated all at once. Specific recommendation may be emphasized by being indented, full faced or underscored. We tell our men that the best method is so to state the facts that the constructive remedy is obvious or implied.

8. Have the report gone over thoroughly first by those who are paying the bill, so they understand what is being done in their name.

9. Submit the report where time permits—for confirmation, conference, discussion and planning remedies—to the officials involved. For example, the St. Paul Anti-Tuberculosis

Committee recently went over in detail with the mayor, his health officer and others involved all of our report on health department needs. The Associated Charities Committee of Syracuse took up in the minutest detail every part of our report with the city officers involved.

10. Give the report to the press facts foremost, so far as possible in short paragraphs, one item at a time and, where several steps are involved, one subject at a time. Potpourri survey reports are not as effective as the solo method. Few men are sufficiently informed on public business to be able to take in from one day's newspaper story the significant facts and needs of several city departments. Where material does not justify a succession of stories, previous arrangement with editors may secure their interest so that they will see—what is largely the truth—that significant facts about several departments make a better first story than the sensational matter about any one department.

11. *Follow up the survey report* with letters to officials and business men; with postal card bulletins recalling facts suggested; with requests to city officials to learn whether facts are being used; with reminders at election time or platform-making time.

Facts Needed Rather than Philosophy

The most dangerous kink in the above program is to obtain the man who gets the facts rather than the philosophy. It is surprising how hard it is for men to trust their own senses and the world's experience when they come to formulating a report. For example, I had this morning gone over one of the best survey reports I have ever seen, and yet it was necessary to ask questions like this: Did you see this or were you told it? State the high percentage of attendance in figures; give the number of

schools lacking fire escapes; don't say several when you can give the exact number. Is it not clear that your town will not be helped if told "restrictions against over-encumbering appropriations should be included in the budget ordinance," unless shown clearly "past budgets have contained no restrictions whatever"?

The surveys mentioned by me are made by the New York Bureau of Municipal Research. There have been so many calls upon us lately that we are now proposing to organize for out-of-town work on a scale large enough to make a quick and thorough survey. I suppose at the present time we have made more surveys of more different kinds of public service than any other agency in the country. Because of the Metz Fund for Promoting Uniform Accounting and Reporting, the Efficient Citizenship Bulletins of which 600 have been sent out to a large mailing list of mayors, comptrollers, newspaper men, and the publicity given to New York work and the Training School for Public Service, we receive a large number of requests for information regarding surveys. It seems that the time has come when this work must be undertaken on a scale large enough to keep a great many high grade accountants, engineers, health officers, school men, etc., always available for utilizing the present full tide of interest in public business methods. We shall be glad to answer questions, make suggestions or send literature illustrating what we have proved to be a productive method of surveying public administration.

How to Conduct a Fly-Fighting Campaign

By Edward Hatch, Jr.

Chairman Fly-Fighting Committee, American Civic Association

EDUCATIONAL work should be begun at once, in schools, women's clubs and other civic organizations, because if you wait until the flies appear in the spring they will be multiplying by the million while you are doing organization work that ought to be done during the cold weather. The American Civic Association's Fly Fighting Committee,* as in former years, will co-

operate with local committees, furnishing literature and answering questions as to methods of individual campaigns, etc.

In your movements for passing of general clean-up and anti-fly ordinances, first secure the interest of your state health department. If you find difficulty in doing this by mere force of suggestion, employ other legitimate means of stirring them to action—petitions from local or state organizations, boards of trade, women's clubs,

* The chairman may be addressed at 156 Fifth Avenue, New York.

town improvement societies, etc. If the head of the state health service is not cordially coöperating with you, he can be shamed into it.

Employ similar tactics, if necessary, with the health authorities, aldermen and other officials of your city or town.

Get ordinances passed (state if possible, local at any rate) for the screening of food-stuffs, the chemical treatment and removal of manure, etc.; but do not think that because you have an ordinance it will enforce itself. Eternal vigilance is the price of freedom from filth and flies. Probably even the most energetic and sympathetic health officer will be unable with the force of inspectors at his command to discover all the violations of the ordinance. You must help him by volunteer inspection and reports; if then he is lukewarm in the prosecution of offenders, make his position uncomfortable; if the magistrates refuse to impose fines for proved violations, make it uncomfortable for them, too. It's all very simple if you are in earnest.

Colorado and Texas have instituted the custom of statewide "Clean-up Days." Induce the Governor of your state, by proclamation, to set aside a day for such a purpose, and if he cannot be induced to do so—but he probably can, if proper representations are made to him—at least get your mayor to proclaim a local "Clean-up Day."

Our good friends the newspapers can do even better work, next year, than they did this past summer. Instead of instituting fly-killing contests, which sometimes have the result of stimulating the breeding of flies by enterprising contestants, let them give prizes for clean back yards, well screened stables, covered garbage cans; or, if their journalistic ingenuity is not equal to the task of making such prize contests serve the purpose of the circulation department, let them at least urge in their news and editorial columns, even more than they have done before, the starvation plan of campaign.

If you must have "fly-swatting" contests to stimulate interest in your local campaign, let them be held as early in the spring as possible, while there are comparatively few flies. If you could find and kill all the spring flies—as of course you cannot—there would be none to trouble you in the summer.

Be careful to brush up any flies that may be lying around with their feet up in the

air, looking as if they were dead; they may be "playing possum." The only safe way is to burn them. Do not throw them out, or into the garbage can, as they will become active as soon as the temperature rises.

How Ottawa Used Boy Scouts

The following letter from Dr. C. Gordon Hewitt, Dominion Entomologist, of Ottawa, Canada, contains much valuable information and many practical suggestions. Dr. Hewitt is a high authority on the house-fly, having made a special study of its habits for years. His recent book, "House-Flies and How They Carry Disease," can be recommended to all who are making a serious effort to abolish the fly nuisance. Dr. Hewitt says:

"The methods of dealing with the nuisance have consisted in either abolishing the breeding places of the fly and the prevention of its breeding, or killing the flies themselves. I have endeavored to point out on all occasions that the former of these methods, namely, the prevention of the breeding of the fly by the abolition or proper protection of its usual breeding places, is the only method which will have any appreciable effect in reducing the numbers of the pest. Nevertheless, the killing of the flies themselves has been regarded by some as of considerable value. I am very dubious about this, and the result of campaigns of this nature confirms my doubts. The only time when the killing of the flies themselves can be of any value is in the spring when the first flies, the progenitors of the summer millions, are coming out of hibernation. In certain Canadian cities fly-killing campaigns were conducted, in some cases by local committees, in others by newspapers; the *Montreal Daily Star*, for example, awarded a sum of \$350 in prizes for the greatest number of flies killed. *In no case did the total number of flies killed in the whole of a campaign exceed the quantity which could easily be reared under natural conditions from an average sized pile of stable refuse in the course of a few weeks.* While the educational value of such fly-killing campaigns cannot be overestimated, it would seem to me that greater results would be obtained by conducting campaigns against dirty stable yards and back yards, garbage heaps and dumps, insanitary privies and all such places which produce the flies and supply them with infection.

"Malaria or yellow fever cannot be stamped out by killing mosquitoes, but by draining, protecting and otherwise abolishing their breeding places; and the fly problem, to my mind, is entirely analogous to that of the mosquito.

"A campaign for the abolition of the possible breeding places of the fly was started in the city of Ottawa, and the assistance of what could be made one of the most powerful fly-fighting organizations, namely, the Boy Scouts,

was enlisted. The most important time for conducting such a campaign is in the month of May. I am speaking more particularly in regard to northern cities and towns where there is some snowfall during the winter. During the winter months organic refuse and stable refuse accumulate to an unusual extent, and unless a thorough cleaning up takes place early in May, such refuse serves as an excellent medium for the breeding of the first flies of the season. Such a cleaning up is of enormous benefit in a fly campaign, as its neglect means that the over-wintering flies get a start.

"The cleaning up or 'spring cleaning' of refuse, etc., is, of course, the duty of the scavenging authority of the town or city; it usually comes under the city engineer's branch, occasionally under the medical officer of health. It is obvious, therefore, that the greatest advantage would be gained by co-operative effort with the local authorities, and this is actually what was effected in the city of Ottawa. The Mayor, who is enlightened on the subject of fly danger, called together the scout masters and patrol leaders of the Boy Scouts. I addressed them on the subject of the fly danger, the breeding habits of the fly and how to fight it.

"The following plan was then outlined and adopted. The city was divided into sections, and the different scout masters with their scouts made themselves responsible for that district. On certain dates, convenient to the scouts, the sections were to be scouted for breeding places of the fly, such as stable refuse, heaps of garbage in yards, etc. The scouts made notes on scribbling pads provided by the city, of addresses where garbage, rubbish, refuse, etc., liable to breed flies, occurred. Those addresses were handed to the patrol leaders, who handed them to the scout masters, by whom they were handed to the Mayor. The Mayor then handed over the list to the city engineer for the immediate attention of the scavenging department.

"In this way the scavenging department had a sanitary survey made of a far more thorough character than would have been possible without the appointment of a large number of sanitary inspectors at great expense. Nor could one enlist the assistance of a more reliable and thorough band of inspectors than the keen-eyed, swift-footed scouts. In addition to making this special survey, the scouts were impressed with the necessity of personal responsibility in abolishing the fly and the need of continuing their efforts in regard to their own homes and surroundings, perhaps the most important point of all.

"I think the kind of campaign which I have briefly sketched is of infinitely greater value in attacking the fly problem than any number of fly-killing competitions, however zealously they may be carried out. It is unfortunate, in my opinion, that the words 'Swat the Fly' and 'Fly Swatting' have come to be regarded as our object and the means to an end we have in view. The killing of flies as a means of ridding the community of this disgusting nuisance and potential disease carrier would be as effective as Mrs. Partington's celebrated at-

tempt to sweep back the sea with her broom.

"We should lay all stress possible on the necessity of treating, either by removal or protection, the places where the flies originate and become infected. Next in order of importance we should aim for the protection and screening of food supplies and the adoption of all necessary precautions of a similar nature, whereby the risk of infection by flies is obviated."

† †

The Need of Community Planning in Child Welfare Work

From a paper by Wilbur C. Phillips before the International Congress on Hygiene and Demography

In every city a large variety of efforts are being made to reduce infant mortality and protect child life. "Coöperation" between the agencies carrying on this work is nominal and ineffective. Coördination under one central head is essential to a community program. Municipalities up to the present time have done no community planning along child welfare lines. The reason is that the scope and complexity of the problem have daunted the courage and staggered the imagination of the workers. Conceived from a unit standpoint, the problem becomes simple. In a small section it is possible to work on a 100 per cent basis.

The cost and methods of this work are easily determinable. When one regards any community merely as a number of smaller unit communities the working out of a community program becomes feasible and practicable. Infant mortality is a problem, not of the infant, but of the family. All social agencies must be utilized. It is a *socio-medical* problem. At present many social agencies are each producing, at great cost, some single and special social commodity. The system is as wasteful as it would be to demand a separate plant and equipment for the manufacture of each single article of commercial use. Efficiency and economy demand that we have a central organization with bureaus which handle all social benefits, and thus bring them, at low cost, within reach of all. The unit health plan, as worked out in Milwaukee, furnishes a practicable and feasible method of attacking infant mortality and child welfare from a community standpoint—that is, from the standpoint of 100 per cent of the babies living therein; taking into consideration *all* factors, social and medical, which bear upon the health of the family.



CHILDREN'S READING-ROOM, KINZIE BRANCH LIBRARY, CHICAGO

The Children's Free Library and City Education

By Frances Jenkins Olcott

The Public Library is made an essential factor in the educational system because of its independent service to all classes of people throughout life, and also because of its co-operation with the public schools, which constantly becomes more intimate and useful.—Report of United States Commissioner of Education, 1911.

THAT you cannot "teach an old dog new tricks," or, plainly speaking, that you cannot easily train an adult in the way he should go is shown by the discouraging failure of much of the effort which the public library has expended in trying to teach adults to use the institution. It is almost impossible to create the reading habit in an adult who has never read; and it is a rare thing to be able to instill a discriminating love of good books into the mind of a mature person who has for years read sensational, enervating trash. Grown people find it difficult to learn to use catalogues and indexes. The tired, set adult brain fails to respond readily to new impressions; it does not draw pleasure through a warped or stunted imagination. And the time of leisure being passed, pressing home and business cares prevent the adult from spending the time that is necessary to acquire a new habit of thought.

Finding that little headway can be made by working with adult readers, the modern, progressive public library now turns for the solution of its difficulties to ancient and fundamental educational principles, and *trains the children*. They are the readers of the future. Many suggestions and ideas instilled into their minds remain there forever, while the constant use of books, and the continuous reading of good things, while young, in most cases, become fixed habits in after life.

For some years past the public library has been cultivating, patiently and surely, a new crop of readers. The result is an immeasurably increased intelligent use of library facilities. Where the work with the children has been solid, and is thoroughly done, the older boys and girls pass into the Adult Department with a keen relish for good fiction and fine literature, and a decided taste for lines of special reading, a



ON THE ROOF OF THE HAMILTON FISH PARK BRANCH OF THE NEW YORK PUBLIC LIBRARY

knowledge of the use of library aids, and of the application to daily life of the matter found in volumes of science, useful arts, fine arts, civics, economics and other subjects.

Meanwhile the library is not training readers only, but it is developing future men and women, keeping alive and feeding their imaginations, stocking their minds with fine thoughts, noble impulses and practical suggestions, and instilling a love of good literature that for all life-time may prove a solace, a joy, and a source of wisdom even to the poorest and lowliest of citizens.

To reach adequately all the children of a large city and to train them into discriminating readers is a tremendous task. It can only be accomplished by means of a systematically organized department of the library directed by expert supervision, and as carefully planned and founded on pedagogical principles as is the public school system. The strength of the departmental work lies in its system, centrally directed. In all forms of business and in educa-

tional work organization conserves energy and funds, and produces positive results impossible to produce through independent action of individuals. In library work with children, an organized, "generated" force of library assistants, working together for a common end, stimulated by the same ideals, coördinating their work for the entire community, is equally necessary. Such an institution becomes a concentrated force, leavening the lives of all the children of the city; whereas the sporadic effort of individual, irresponsible library assistants, no matter how well trained or how well meaning, wastes energy and public funds and produces feeble, inconsistent and scattered results. A well-organized Children's Department not only correlates its work with the methods of the Adult Department of the library, in the same way that the primary school correlates its curriculum with that of the higher schools, but it also becomes an aid and tributary to the work of all educational institutions of its city that deal with children.

Children's Library Work in Pittsburgh

As an illustration of how far a public library can become a factor in the educational system of its city it may be well to survey briefly the work of the Children's Department of the library which was the pioneer in this new movement. The city of Pittsburgh, picturesquely situated at the forks of the three rivers, overshadowed by clouds of smoke by day and pillars of flame by night, teeming with a mighty multitude gathered together from many parts of the world—this city offers a rich field for educational and sociological experiment, and it needs children's free libraries as much as, if not more than, any other city in the Union. The city is built on many hills. On one hand are fine parks, palatial residences and pleasant homes. On the other hand numberless little houses and wooden shanties lie in the muddy or dry-baked bottoms of the "runs" and gullies; while other shacks and buildings seem to creep and stagger up the precipitous hillsides. In crowded parts of the city are networks of

alleys filled with tenements, front and rear. It is a city of many nations, numbers of the people speaking no English. The Tenth Census showed a population of which more than two-thirds were foreign born, children of foreign born, and those of negro descent. The topography of the city makes it expensive and difficult for the library to reach all the people.

In 1898 the trustees of the Carnegie Library of Pittsburgh, a tax-supported institution, believing in the fundamental educational value of the library work with children, established the first comprehensive Children's Department, having for its aim the placing of good books in the hands of every child in Pittsburgh. Although there were individual children's reading rooms elsewhere, there was no other library in any city having an organized department on which to base the Pittsburgh work, and from the first it was necessary for that library to experiment with methods of organization for book distribution, of means of coöperation with other city institutions,



THE FIREPLACE IN THE PERKINS CHILDREN'S LIBRARY, CLEVELAND, ON A WINTRY DAY

and to evolve ways of guiding children's reading and to establish some definite, practical standards of juvenile book selection.

By means of a compact, businesslike organization, under the direction of a head children's librarian, the Children's Department developed to meet the needs of its city. From its administrative offices in the Central Library it sent out feeders to all parts of the city, even into remote alleys and byways. In crowded districts were established reading rooms, in charge of attendants who were selected for their special fitness and trained to work with children. These rooms became literary centers for their neighborhoods. To schools—public, private, Sunday school and parochial—went boxes of carefully selected books for use of pupil and teacher. Into bath-houses, settlements, playgrounds, vacation schools, missions, and even into telegraph offices and the Post Office (for special messenger boys) went library books, and at these centers were established reading clubs for boys and girls, in charge of library leaders.

In tenement families, impossible to reach by any of the above mentioned activities, "home libraries" were started under the supervision of friendly visitors. Coöperation was also established between the Children's Department and such institutions as the Juvenile Court, Toy Mission, dispensaries for the poor, and charitable associations. In 1909-10 the Children's Department operated through 227 book-distributing centers, only nine of which were under library roofs, the remaining 218 being housed in quarters donated to the library by schools, settlements, missions, homes, etc. In almost every case heat, light and janitor service were given free. The Pittsburgh Playground Association not only equipped children's reading rooms in the field houses, but paid part of the salaries of the library assistant in charge of playground reading rooms.

Of the children who registered during 1909-10, only 3.89 per cent of their parents were in professional life. The percentage of parents in domestic and personal service (bartenders, saloon-keepers, pool-room proprietors, barbers, laundresses, watchmen, policemen, etc.) was 30.13; that of parents in trade and transportation (agents, collectors, peddlers, hucksters, salesmen, railroad employees, etc.), 22; that of parents engaged in mechanical and manufacturing pursuits (bakers, butchers, joiners, stogy-

makers, glass-workers, oil-drillers, iron and steel workers, etc.), 43.59.

Many of these parents were Armenian, Australian, Austrian, Belgian, Bohemian, Croatian, Danish, French, Greek, Dutch, Hungarian, Lithuanian, Norwegian, Roumanian, Scotch, Slavonian, Swedish, Syrian and Welsh. The four largest groups of foreign-born parents were German, numbering 10.88 per cent of the whole; Russian and Polish, 10.35; Irish, 9.90, and Italian, numbering 5.37 per cent.

Thus the Children's Department was an organic whole, operating in all parts of the city, its work being correlated, systematized and rendered forceful by a corps of expert workers trained in the Training School for Children's Librarians, which was an important division of the departmental work.

Some Wonderful Results

Although the figures of juvenile circulation and attendance grew larger yearly as new centers were opened, yet the Department laid stress, *not on large figures*, but on the quality of reading done; on the efficiency of methods used to guide the children's reading; on uniform, high, but practical standards of book-selection and on supervision of the work by selected, trained specialists, who were children's librarians, teachers or social workers. To sum up briefly the results of thirteen years of library work with the children of Pittsburgh, there are to-day thousands of young adult readers whose reading habit, and love of good books, they owe entirely to the work of the Children's Department. Boys and girls have been kept off the streets at night, homes have been enriched, school curriculums broadened and made more interesting, city institutions have been aided in their work with children—all by means of library books. Nickel novels have been supplanted, and in some districts driven out of the shops by the advent of the library book offered *free* to every child.

How is it possible to estimate the power of a good book to mould character and tastes, and who can measure the far-reaching influence that the children's librarian exerts on the lives of the individual child whom she meets day after day in an informal, friendly way? She moulds character as well as literary tastes. For this reason the children's librarian should be a sincere, earnest woman, just and true, with



STORY-TELLING IN A SUMMER PLAYGROUND IN SEATTLE

the background of education that comes from a cultured home as well as from school or college, and she should have, besides special training for the work, a love of children, imagination enough to permit her to draw close to children, and plenty of that saving grace—a *sense of humor*. With such a woman presiding over the children's reading room, reading club, or home library,

those centers cannot fail to radiate a wholesome, sane influence for good that must affect the lives of the neighborhood children.

Among the many methods evolved by this Children's Department to direct children to better reading is the library story-hour. This was started in 1899. Its object is to lead by graded steps from the enjoyment of



A LIBRARY IN A HOME

the simpler forms of literature to the reading of classic and romantic literature. The books from which the stories are taken are rendered so popular that it is necessary to buy many duplicates. The stories are told informally in library auditoriums, in club rooms, schools, at home library meetings, in playgrounds and vacation schools and field houses. The force of the method lies in the systematic graded story-telling from the best of literature; the story-teller always keeping her main object before her, that the story should lead to books, and not merely entertain.

In Pittsburgh a graded list of good stories to tell was prepared and experimented with during eleven years. For the youngest children, and extending to the eighth grade boys and girls, were prepared cycles of stories lasting a school year, from early winter to spring. These cycles were planned to last for seven years, and at the end of that time to be repeated. Stories for the younger children included fables, myths (Red Indian, Greek and Norse), fairy, folk and wonder tales; historical, legendary and hero stories. For the older children were cycles of stories from the ballads, from the Siegfried legends, from Chaucer's *Canterbury Tales*, from Spenser's *Faërie Queene*, from the King Arthur legends, and the tales of Charlemagne; also from Homer's *Iliad* and *Odyssey*, and from Shakespeare. Miscellaneous stories from romantic and classic literature were told in the summer playgrounds, and suitable holiday stories at Christmas, New Year and other special times. Graded lists of these stories were prepared for the use of the story-tellers, and were used throughout the city; some of the lists were printed, and used in other cities, as were also the catalogues and Christmas lists of children's books issued by the Children's Department.

Following in the wake of Pittsburgh other city public library children's departments were established; among these were the ones in Brooklyn, Philadelphia, Cleveland, New York, Washington, St. Louis, Tacoma, Seattle and Galveston. Many other libraries have followed suit, and today there is scarcely a city or town library that does not have its organized children's department.

The Brooklyn library maintains, under the direction of a well-known expert, a system of children's reading rooms, the work of which is sane and far-reaching. The

book lists of this department are useful and trustworthy, and helpful to mothers as well as to teachers and librarians. Many problems of building, equipment and discipline are being worked out in this system. The Children's Department of the Cleveland Public Library, which was reorganized a few years ago by the first assistant from the Pittsburgh Children's Department, follows in the main the Pittsburgh organization, but has developed many original pedagogical methods. These are set forth in an interesting and valuable pamphlet entitled "The Work of the Cleveland Public Library with the Children, and the Means used to Reach Them." This pamphlet contains much food for serious thought, and should be read by educators, teachers and librarians.

The Cleveland library has announced a Training School for children's librarians, which, together with the school in Pittsburgh and that conducted by the School of Education of Chicago University, are the leading schools specifically training for this profession. Some of the general library schools also offer special courses in library work with children.

Some of the Problems

The value of library work with children has been demonstrated and proved to be fundamental. The work has come to stay. The public regards it as indispensable in the education of children. But the movement is yet in its experimental stage. It has developed along the lines of organization, methods, and of intellectual and civic betterment. While librarians have been active in promoting reading of books and efficiency of service, they have failed to give thorough study to the problems of hygiene which affect the children using the reading rooms. Little serious attention has been paid to questions of light and its effect on the eyes, to ventilation, proper seating, adequate floor space and breathing space for the multitudes of boys and girls who throng a busy children's reading room. The writer has seen rooms where the light fell injuriously on the eyes of children who were seated in chairs so badly proportioned as to produce most unhealthy postures, and who were using tables so high for the chairs that the children had to stretch their bodies to see the books resting on the tabletops. The air of the rooms was hot, heavy and fetid with nauseating odors, while the

children thronged the rooms to such an extent that the assistant could scarcely pass between them. Such rooms are breeding places of diseases. Common drinking cups, common towels are also disease carriers, and they should not be found in libraries, especially in children's rooms. It is time that the libraries seriously studied these questions, which are of such vital importance to the health of the community. The schools can teach us much on this subject, for in the finest of modern public

figures impress those who vote the money. Unless the librarian's statistics of circulation and attendance are materially increased he is not likely to receive an increase in the library appropriation. But no sincere librarian is willing to bring up his statistics by the purchase of quantities of sensational and harmful juvenile fiction, which children and young people will read with avidity; nor is he willing, in order to swell his statistics of attendance, to turn his children's reading room into a place of



THE BROWNSVILLE BRANCH OF THE BROOKLYN PUBLIC LIBRARY

To relieve the congestion here a well-equipped branch building especially for children is being built

school buildings are incorporated the results of experiments by many experts in school hygiene. Among the libraries paying especial attention to these problems are the Brooklyn and the Cleveland Public Libraries.

The Public Library has one serious drawback to contend with. That is the demand of many library boards and city officials for annually increased statistics, *as though only figures could show the educational value of the library to its community.* Big

amusement and to carry on spectacular story hours that bring thousands of children to the library but do not lead to reading. Such work with children wastes the public money. Yet this is what the city officials encourage when they base appropriations on statistics of circulation and attendance, or allow themselves to be influenced by reported figures only.

Through public talks, reports and other printed matter, librarians are continually attempting to show to their communities

that the educational value of sincere, substantial library work cannot be measured by statistics only, but by reports answering specifically such questions as:

What are the standards of book selection maintained by the library?

What is the quality of the reading done by the public?

What is the library doing to reach the wage-earner?

Does its children's department do organized and effective work with all the children of its community?

Is the library's work with children supervised by a specialist?

Do the methods (including the story hour)

which are being used with the children lead to better reading?

Does the library coöperate with homes, schools and other institutions of the city?

How far is the library an educational factor in its community?

When city officials shall accept such reports, and vote funds for library support accordingly, then will the American public library be able to realize more truly than ever its high ideal—that of being the People's University, offering education free to all, and founding its work on the thorough training of the children.

Public Utility Advice from the Public Point of View

By Delos F. Wilcox, Ph. D.

IN all matters relating to franchises and public utilities, most American cities have suffered grievously for lack of expert advice. Charter provisions have often been injudiciously drafted, franchises im providently granted, and regulatory ordinances passed without sufficient knowledge of their effects—all with the result that the relations between cities and the public service corporations serving them are generally incongenial and often actively hostile. The result is that little definite progress is made towards adequate public control, while at the same time development is often retarded and unsatisfactory service encouraged. Experience joins with reason in urging that public service corporations are engaged in the performance of public functions and therefore must be subjected to public control. The private motive seeking profitable investment for capital and adequate remuneration for managerial ability must be harnessed to public service.

Many intelligent citizens believe that the only satisfactory ultimate solution of this problem will be in the complete municipal ownership and operation of all the principal local utilities, and almost everybody agrees that the power to acquire, own and operate these utilities is an essential element in the city's power of control. But municipal ownership, either immediate or prospective,

becomes practical only with the removal of certain legal, contractual and financial obstacles that are found in a greater or less degree wherever private corporations now occupy the utility field. These difficulties have been multiplied by the hasty and ill-considered action of cities, and often continue to be multiplied even after a city has in a general way adopted municipal ownership as its ultimate goal.

Many cities are without authority to own and operate some or all of the utilities. This legal difficulty is gradually being overcome by the liberalization of charters and by the broadening of constitutional guarantees of municipal home rule. The difficulty still exists in many states and cities, however, and cannot be fully overcome except by constitutional amendments, enabling acts or charter amendments scientifically drafted for the accomplishment of a clear-cut purpose.

Resettlement of Franchise Contracts

Practically every city finds itself more or less tied by its outstanding contractual relations with corporations already in the field. In some cases franchises are perpetual, subject only to termination by the exercise of the right of eminent domain, and to regulation under the police power. Sometimes, indeed, even rates seem to be

fixed by contract forever. Where not perpetual, franchises may be for such long periods as to be out of the reach of the present generation, and when they are for shorter periods and soon expiring it is often the case that numerous franchises for the same kind of utility have been granted upon different conditions and to expire at different times, so that the city may never be in a position to deal with one of its utilities comprehensively. These contractual difficulties in the way of the development of an adequate public control are rendered more serious by the fact that almost never has a corporation assumed the obligation to extend its lines as public needs require. Public utilities having been initiated in most cases as primarily private enterprises to be conducted solely for profit, there is of course no motive for the extension of lines beyond the profitable areas. Almost everywhere the most acute phase of the unpleasantness existing between the cities and the corporations arises from this perennial conflict between the public demand for extensions and private unwillingness to build them until they offer a good prospect of being immediately profitable. With existing corporations occupying the central, built-up portion of the city, it is practically impossible to get service for an outlying district by means of new companies; for it is one of the fundamental laws of public utility operation that in a local urban community each utility should be developed as a unit, and extensions secured on the principle of the fat supporting the lean. Hence, in most cases, a city's franchise policy for new grants and for independent extensions is of relatively little importance. What is vitally necessary is the extinction or the readjustment of existing contract rights, to the end that the entire utility may be brought under modern methods of control and be made to expand as a unit to meet the city's growing needs.

Perhaps the worst of all the difficulties in the way of municipal control of public utilities is the financial one. As it is, and without the acquisition of privately-owned utilities, municipal debt is growing by leaps and bounds. At the same time the capitalization of public service corporations and the price at which their properties could be acquired are increasing, if anything, more rapidly than municipal debt. In spite of the liberalization of the laws and the occasional

readjustment of contractual obligations, cities are practically getting farther and farther away from the possibility of municipalization on account of the financial difficulties mentioned. This means not only no actual municipal ownership, but also no potential municipal ownership to be used as a club to ensure good service at reasonable rates under private operation. While regulation by ordinance and by commission may be effective for a limited period and to a limited extent, even where there is no practical possibility of substituting the direct for the indirect method of performing these public functions, it does not appear that regulation can be permanently effective under such conditions. The financial difficulty in the way of public ownership must be overcome.

A Plan of Decapitalization

When public utilities are constructed or acquired by the city, they are usually paid for out of earnings. A municipal utility is not considered self-sustaining unless, in addition to paying operating expenses and interest on capital cost, it also supports a sinking fund to retire the bonds when due. There is no good reason why this conservative and salutary rule of public finance should not be applied to a utility being operated under a franchise. The financial problem of municipal ownership will be solved and at the same time private capital invested in public utilities will be made more secure if the policy of requiring the utility to pay for itself within a reasonable period is adopted. In fact, the savings in the rate of interest that can be effected if the investment is made non-speculative may be almost or quite sufficient to amortize the capital. In this way the purchase price will be constantly decreasing relatively to the city's purchasing power, and the possibility of municipal ownership will be constantly drawing nearer.

Under this plan of decapitalization the city does not necessarily pledge itself to municipal operation. The mere fact that the private investment had been retired and the body of alien capital driven out of the streets would not prevent the city's making an arrangement with a purely operating company to carry on the business, if such a course seemed desirable. There would be this difference, however: the fixed charges having been eliminated, rates could

be reduced, service improved or extensions made to the extent of the annual savings in interest, and the city would be in continuous control of the situation.

Every franchise grant and every regulatory ordinance has in it elements of engineering, accounting, and law, three distinct technical professions. Engineers, accountants and lawyers generally hold themselves open to employment on either side of a case in which their professional services can be used. Because the cities have had so little to do with public utilities, the engineers, the accountants and the lawyers have habitually and almost necessarily looked to the corporations for their principal employments in relation to public utility matters. Moreover, cities have been rather niggardly in their rewards offered for services of this kind. Conditions are changing, and a body of technical men is being developed in the public service through the activity of utility commissions and city governments. It still remains true, however, that the principal rewards are to be had on the corporation side, and though professional ethics permits technical men to accept employment on either side as opportunity offers, yet there tends to be a natural bias for the side where most of the profit lies. Moreover, a franchise is a big question of public policy, transcending in its scope and importance the merely engineering, the merely accounting and the merely legal aspects of the case, one and all. For this reason cities have need of expert service from men whose training is broad enough to enable them to coördinate all the different factors in a public utility

problem and to give constructive advice from the public point of view. In such work men cannot properly hold themselves open to be employed on either side. They must be, as it were, consulting civic statesmen, looking entirely to the cities or other governmental authorities or to disinterested civic bodies for their retainers.

Franchise Surveys Needed

The field for such work is wide. Legislation needs to be drafted, legislative committees advised and public addresses on the fundamental principles of utility regulation made. Existing franchises need to be examined and criticised and new franchises prepared. In fact, every city should have what may be called a "franchise survey" to form the basis for a constructive public utility program as a part of the city plan. The very fact that this branch of city planning is subtle and intangible makes it all the more important. The cities need expert representation in the negotiation of franchise resettlements. Valuations need to be supervised and rate and service regulation proceedings guided.

Almost every city feels the need of some of these services, but either does not feel able to pay for them or does not know where to get them. A willingness to pay for them will tend, of course, to bring the services required into the market. There is reason to expect a substantial development along these lines in the near future, and if it comes it will mark a great step in advance toward successful municipal government in the United States.

Charity Transportation

A Practical Plan for Co-operative Investigation—Through Transportation Preferable to "Passing On"

By Alexander M. Wilson

Assistant Director Department of Public Health and Charities, Philadelphia

THE never-failing hope of the applicant for free transportation that he will be better somewhere else, or anywhere else, than where he finds himself at the moment, seems to be shared by the public officials to whom he applies; so he is "passed on." An applicant, having once succeeded in being "passed on," becomes experienced in the ways of officials, adjusts

his story so that the haven of prosperity for him is the nearest town over the county line, or the nearest large city if the fare there is not too expensive.

It is a serious matter when shiftless, and sometimes demented, men and women are "passed on" in their quest for relatives not heard from for years, when feeble-minded women with their babies are sent on search-

ing work never to be found, and when runaway boys are helped to elude their anxious parents. In these cases the waste of money is a consideration secondary to the hardship imposed by charitable officials on irresponsible people.

While the abuse of free transportation makes paupers, we must not forget its proper use. No public official needs to be shown the advantage of removing undesirable citizens to their residences. Communities should not be expected to do more than to take care of their own residents; but they should provide for these and co-operate with other cities in the return of their own people.

Properly handled, free transportation can be the means of finding homes for old people with their children; it may put families on their feet by sending them to a place where work is assured, or it may restore runaway boys and girls to their parents.

A good method of handling free transportation has been worked out by the charity organization societies in this country, in coöperation with a few public officials. Every non-resident seeking transportation should be detained until his story has been investigated and word received from his destination. If it is proper to send him on, he should be given through transportation and not forced to renew his application for help in other places.

The first difficulty is encountered in making the investigation. It is unjust to detain people very long; and where you are dependent upon poor-board officials of small towns, who may not understand the need of a quick and thorough investigation, there are delays. In the larger cities, where there are charity organization societies, you will have no difficulty in getting prompt replies and thorough coöperation.

The next objection raised is the expense of sending people through to their destination. Our experience in Philadelphia proves conclusively to us that it is less expensive to do so than to simply "pass them on," and moreover we are sure that no money has been wasted.

The city which adopts the policy of sending on no non-resident without an investigation and without a through ticket to destination will, of course, be the dumping ground from other places where such a policy is not in force, and will have to spend some money in sending undesirables back

to these "passing-on" towns. A solution is offered in the transportation agreement in force among the societies for organizing charity throughout the country, and also signed by some twenty-six public officials, which reads as follows:

"I (we) hereby agree to abide by the rules published for the Committee on Transportation of the National Conference of Charities and Correction for the purpose of eliminating existing evils and promoting efficiency in the granting of free transportation and charity rates."

These rules require:

(1) That the applicant is unable to pay the regulation fare.

(2) That his condition and prospects would be sufficiently improved by sending him to the place in question.

(3) That he will have such resources at the point of destination as will save him from becoming a public charge.

(4) That he has a legal residence in the place to which he is to be sent.

They further require that statements made by the applicant should be substantiated by reliable evidence; that his destination should be notified; that word should be received from his destination after he has been sent on; that through transportation should be given and "passing on" forbidden.

While it has been shown that the adoption of these common-sense rules proves in the long run to be economical, it is of greater importance that they offer a reasonable solution to one of the perplexing problems that arise in the administration of public and private relief, and one that gives promise in a given instance of helping in a permanent way rather than in a manner that merely encourages shiftlessness and further dependency. This transportation agreement has already been signed by over five hundred agencies, public and private, that find this method helpful. Lately the Russell Sage Foundation has undertaken to further the usefulness of the "Agreement" by providing an office and by a propaganda for its more general adoption.†

In all discussions of this subject among public officials, the matter of determining the legal settlement of the applicant plays an important part. The laws of the different states differ widely as to what constitutes legal settlement. In the absence of federal legislation on the subject, each individual case must be decided separately between the cities involved, and concessions must be made on both sides.

† For further information, write to the Russell Sage Foundation, Room 613, 105 East Twenty-second Street, New York City.

Trees, Shrubbery and Flowers in City Streets



Courtesy of Wright Wire Company

PROTECTING THE SHRUBBERY ON THE PLANTING STRIP



Courtesy of City Parks Association, Philadelphia

PARK STRIP ON BAINBRIDGE STREET, PHILADELPHIA, FORMERLY OCCUPIED BY
MARKET SHEDS



Courtesy of J. B. Pilkington

NORWAY MAPLES AND CAROLINE TESTOUT ROSES ON WASCO STREET, PORTLAND, ORE.



Courtesy of J. B. Pilkington

A BORDERING HEDGE OF ENGLISH HOLLY

Electric Wires and Shade Trees*

By Alfred Gaskill

State Forester of New Jersey

CONTRARY to the common belief, electric wires are rarely directly harmful to trees. They are objectionable chiefly because the workmen who look after them are careless or indifferent and do unnecessary damage. The current in a telephone wire is too weak to be injurious under any circumstances, while a lighting wire carrying an alternating current will injure the living tissue of a tree only when wet weather and the loss of insulation make possible a close contact. Most of the injury done to trees comes when a high tension direct current escapes, as from a trolley feed wire, and burns the tree at the point of contact or is grounded through its trunk. In the latter case a tree may be killed as by a lightning bolt. But injuries of this kind are too rare to require special consideration. Moreover, the management of no electric company will long neglect a contact that means a loss of energy in its lines.

It will be admitted that overhead wires are objectionable in any organized community and should be put underground wherever it is practicable. Let every effort be made to extend the territory within which all wires must be carried out of sight, but at the same time let the facts as they affect most tree interests be not forgotten. These are that electric service is indispensable, that the electric companies have certain defined rights in many streets, that private, municipal and

corporate interests are more often served by agreement and compromise than by contest. And it is always easier to adjust a matter of this kind before a franchise is granted, or before work is begun, than after an installation is in place. The following suggestions may help to resolve various difficulties in connection with shade trees:

How to Harmonize Tree and Wiring Interests

1. If wires are to be extended to a street not previously served, seek by agreement to have the poles set behind the houses rather than in front. This is often difficult, as where the street lights are on a high tension circuit while the houses are served from a low tension, or it may be impracticable for other reasons. Nevertheless it can be accomplished in some cases, especially if the property owners are reasonable with respect to allowing linemen free access to the poles, and provision is made for crossing intersecting streets.

2. If wires are to be run on a shaded street where they have not been before, try to have the poles set on one side or the other



TREES ON CURB, A, MUST COMPETE WITH ELECTRIC WIRES. THOSE INSIDE WALK, B, HAVE HEAD-ROOM. NOTE FINE ROW, C, PROTECTED FROM STREET BY SIDEWALK

* Reprinted, by permission, from a book on "The Planting and Care of Shade Trees," published by the Forest Park Reservation Commission of New Jersey.

of the tree line, preferably next the curb.

3. If lighting wires must be run with a line of trees, consider whether they shall be carried on high poles over the trees, on crossarms projecting into the street, or through the bodies of the trees. The chief objection to the first plan, next to its unsightliness, is that the growth of the trees will almost surely bring the upper shoots into contact with the wires and thereby cause them to be broken and the tree crowns distorted. At the same time the wires will be disturbed, and the current perhaps grounded. This is rarely a good plan.

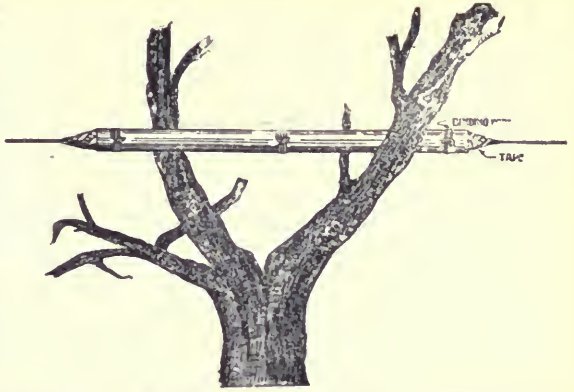
Carrying wires on projecting crossarms is objectionable because it interferes with the freedom of the roadway, and looks badly. The device should be resorted to only in exceptional cases. *As a rule it will be found most practical and most satisfactory to carry wires through the bodies of trees and quite low down.* They must be insulated, of course, but when that is done properly the trees will not be injured and the wires themselves will be less disturbed by the normal tree movements. Trolley feed wires should always be properly insulated and carried as low down as is practicable.

4. Telephone wires should always be carried through the lower portions of trees, and when there are several be united in a cable. It is not practicable to cable high-tension wires.

5. If trees are to be planted in a street where the only available room is already occupied by wires—that is, a street with little space between the curbs and building lines—there are just three courses open: *one*, to induce the electric company to remove the wires before the trees are set; *two*, to get an agreement that they will be removed or raised at a fixed time in the future, or when the trees shall have grown so that tree shoots and wires interfere; *three*, to plant low growing trees, and by pruning keep them below the wires. The last is often a good plan, as big trees are out of place in a narrow street.

Damage Done by Linemen

With respect to the damage done by linemen, there is now less ground for complaint than there formerly was. Nevertheless



ABRASION Moulding—USED TO PROTECT TREES AND WIRES

such men will bear watching, and should be given to understand that they will be held responsible for any injury. There is ample law and precedent to prevent injury in this way, as well as to secure redress if the property owner will trouble himself to protest and, if necessary, to prosecute his claim. It will not often be needful to go further than to make a formal complaint or claim; corporations dislike litigation and will satisfy any just demand. Two points only need be observed:

1. Forbid absolutely the use of climbing spurs; they are unnecessary in tree work, and every time they break the bark give disease germs a chance to enter. And forbid a workman to go into a tree, even by a ladder, with his spurs on; they will damage the bark and the branches.

2. Require the man in charge of the work strictly to observe the rules of the National Electric Light Association. These rules have been adopted by most of the telephone, telegraph and lighting companies, and in themselves prove that the officials are ready to do their share to avoid trouble. The most important of the rules are:

"11. Wires shall be strung on the side of the street most free from trees."

"66. Guy wires shall not be attached to trees without the permission of the owner or other proper authority."

"68. Tree trunks and limbs shall always be protected from injury by the use of tree blocks between the tree and the wire attached thereto."

"83. Line wires shall not be supported upon trees."

"89. It is essential for the safe and uninterrupted operation of lines that they be free from possibility of grounding on trees. It is therefore important that tree branches inter-

fering, or likely to interfere, with the lines should be cut away. Such trimming must be done with care and judgment, and under the supervision of the superintendent, line foreman, or other responsible person."

"90. Before any trimming is done the consent of the owner of the tree should be obtained. Opposition to tree trimming may sometimes be overcome by offering to employ a professional gardener for this purpose. If consent to trim trees cannot be obtained, and

the interfering branches cannot be avoided by the use of longer crossarms, or by offsetting the standard crossarms, tree wire shall be used."

"91. The stubs of branches shall always be painted for their protection and to make them less noticeable."

"94. Where tree wire is used, if there is danger of limbs or large branches chafing the insulation, it shall be protected by means of wooden abrasion moulding."

Some Shade Tree Planting That Might Have Been Better Done

EDITOR'S NOTE.—THE AMERICAN CITY *prefers to describe successes rather than to record failures. Occasionally, however, lessons may be drawn from work badly done which may help other cities to avoid similar mistakes. Believing that the following article is a case in point, we gladly give space to it. The author is a forester familiar with the facts, who has intentionally omitted names of persons and place, the article being a criticism of methods rather than of men.*

THE difficulty of successfully growing shade trees along public highways in large municipalities is recognized by those who have studied civic betterment, and by those who have observed closely the results of various attempts in street tree planting. By many, however—including even some of those who actually direct or supervise such work—the planting of shade trees in cities is thought to be simply a matter of selecting a tree, digging a hole in the ground, placing the roots therein and covering the roots with soil, with no particular care in the operation.

The results of such haphazard planting of shade trees on a city street may be clearly seen on a certain main thoroughfare in one of our eastern cities.

Awakened by the repeated demands of the residents for more trees on this street, the commissioners in charge advertised for and received bids for five thousand shade

trees, three inch caliper at the ground, listed as poplars, maples, elms, horse chestnuts and planes. No specifications describing the trees to be bid upon were drawn up, nor were definite varieties mentioned or any inspection or guarantee demanded. Very low bids were received, and on these bids awards were made covering delivery on the street as wanted.

The trees were delivered as directed, and before planting were laid out one by one at the points of planting, exposing the roots to the sun and wind until such time as holes were dug for them. In some cases the roots were exposed six hours, thus decidedly weakening the tree before planting. The planting was done under the direction of a foreman of street repairing. A hole was dug sufficiently large to cover the roots, but no larger, and no attempt was made to enrich the soil, mainly a yellow clay with a few inches of good soil on top. The tree,



THE RESULT OF PLANTING IMPORTED HORSE CHESTNUTS

Showing also poor crown treatment before planting

without any observation as to its condition and with no proper cutting back of the crown or proper root treatment, was placed in the hole and dirt thrown in.

A large proportion of the maples were the Norway maples, an excellent shade tree, but the rest were sugar maples, a poor variety. Practically every maple tree was scabby, poorly headed and with scarcely any root system, being very poorly grown nursery trees. Over three-fourths of these died within a year of planting.

The horse chestnuts were imported from Holland and were delivered on the street directly after arrival in this country. These trees arrived in a perfect condition and were perfect trees in all respects. They

were planted, as were the maples, with no crown or root treatment. As would be expected, practically all died within the following growing season. It is extremely difficult to plant successfully a newly imported tree on city streets where all conditions for growth are at the worst.

The elms were the American elm and were perfect trees, but owing to poor planting over seventy-five per cent died during the following year.

The planes, of which there were only a few, comprised both the American and the Oriental plane. They were good trees, and in spite of the fact that they were poorly planted thrived better than any other kind.

The poplars were the Carolina and were



POORLY PLANTED ORIENTAL PLANES WHOSE BRANCHES WERE NOT CUT BACK BEFORE THE TREES WERE SET OUT



ORIENTAL PLANES PROPERLY TREATED AND PLANTED

very poor trees, as they had practically no root system and were branched too high. Nearly all these trees died shortly after planting, being poorly planted and having no roots to sustain them.

The approximate cost of all these trees was \$7,500, and the cost of planting, if estimated at 25 cents per tree—and the actual cost appears to have been much higher—would bring the total cost up to \$8,750, a sum whose net results a year later were not more than 500 trees.

The following year bids were received for 1,300 trees of the same kind, but only the bids on the horse chestnut and planes were accepted. The average price was \$1.80 each, a very low price for good trees. All of these were imported and planted directly after arrival in this country with the same lack of care and attention. As a result, on same basis of cost of planting, for approximately \$2,665 there were added to the street about 200 trees, which were growing a year later.

The following year the only trees accepted after reception of bids were 1,000 Carolina poplars. This action on the part of the commission came apparently as a result of the unsuccessful attempts of previous years in the growing of other and more suitable varieties. Evidently it was agreed that it was impossible to grow

maples, horse chestnuts, elms or planes; therefore it was decided to grow poplars. The Carolina poplar is, without doubt, the most unsuitable of all varieties of trees for street planting, notwithstanding the fact that more are planted than of any other kind. Strange to say, this time the commissioner selected a capable man to supervise the planting, and as a result practically every tree grew well. These trees cost about \$1 each, and basing the cost of planting at 25 cents per tree, the total cost for this year would figure at \$1,250. All these trees were used in replacing dead trees, but by no means were all dead trees replaced.

As a result of three years of planting, not considering at all the loss of one or two years of growth which would have resulted from proper attention by capable men, at a total cost of \$12,665, there have been added to the street 1,700 new trees, more than 1,000 of which are of a most unsuitable variety. This, boiled down, means that a three-inch tree cost close to \$7.50 to purchase and plant. It must be borne in mind that more than 1,000 of these trees were Carolina poplars, a very cheap tree.

What more need be said of the importance of expert supervision of the purchasing and selecting of shade trees, of proper inspection of trees when delivered and of intelligent care.



A Plan for Multiplying the Utility of Business Thoroughfares!

By William F. Streich

THE plan herewith presented contemplates the separation of vehicular and pedestrian traffic on business thoroughfares; the elimination of the danger of casualties common on congested surface streets; the relief to both pedestrians and vehicle drivers from the nerve-racking mental tension incident to avoiding these perils, and the provision for present and future expansion of business and traffic facilities commensurate to the needs of a large and growing community.

The accompanying drawing illustrates the plan as it could be adapted to Washington Boulevard, Detroit, for transforming that thoroughfare into an imposing civic feature of utilitarian value, designed to establish a permanent, distinctive, retail amusement and hotel center. The transformation is shown in the illustration as it would appear looking from Michigan Avenue to Grand Circus Park. The build-

ings shown in the picture are merely suggestive of the appearance of the projected improvement, and form no part of the plan, which may be described in brief as follows:

The improvement will consist of a depressed vehicle course and a triple-deck pedestrian system, with stores fronting upon each of the three levels designated and described as:

(a) The trafficways, lowered 16 feet below the present street grade, bridged at intersecting streets and having declinal vehicle approaches. The surface width of 145 feet will be taken up by 15 feet of sidewalk on either side; two vehicle courses of 42 feet each, separated by a series of longitudinal sections of terraced gardens 31 feet in width, taking the place of and compensating for the present parking.

(b) The gradeways, formed by column-supported sidewalks at the present grade level, projecting beyond the trafficway curb to shelter limousine and pedestrian shoppers on the trafficways during inclement weather, taking the place of the present asphalt driveways.

(c) The causeways, formed by the roofs of architecturally uniform one-story store-front



PROPOSED IMPROVEMENT OF WASHINGTON BOULEVARD, DETROIT

extensions to present and future buildings, connected by ornamental bridges at transverse streets, constituting continuous elevated walks four blocks in length, occupying the present sidewalk space.

The three pedestrian ways or walks on either side will be approached through public entrances, located two in each block, and corresponding with each other on the three levels. They may also be reached through any of the stores and shops which will front upon the ways. The gradeways will be on the same level as the sidewalks now existing, and will, therefore, be directly accessible from all intersecting streets.

The widths of the pedestrian ways will be 15 feet on the traffic grade, 25 feet on the gradeways and 25 feet on the causeways, equivalent to 65 feet of sidewalk on each side of the ways, or a total width of 130 feet of sidewalk surface.

The terraced gardens between the traffic ways will be divided at the bridges to facilitate the crossing of vehicles from one side to the other.

The plan presents many interesting opportunities in the fields of design, construction, efficiency and maintenance. The improvement as a whole, if adopted, will constitute a magnificent public way where public entertainments and pageantry can be staged and open air concerts may be tendered the people on stated evenings. Incidentally these attractions will serve to draw attention to window exhibits and bring increased patronage to the shops and other establishments on the ways.

Helping Water and Land Traffic in Portland, Oregon

In making plans for the installation of a drawbridge for Hawthorne Avenue, Portland, Ore., the city officials endeavored to eliminate the many vexatious delays due to the constant opening and closing of the old draw-span type bridge which formerly occupied approximately the same location as the present structure.

The lift-span type was selected as being the one which would most effectively alleviate these conditions. Not only is the time required to raise the bridge to the top of the span and lower it less than that required to swing open the draw-span type, but in most cases it is unnecessary to raise the span more than a few feet to accommo-



VIEW OF BRIDGE WITH DRAW RAISED, SHOWING BOAT GOING THROUGH

date the greater bulk of the river traffic. Consequently the delays to traffic across the bridge have been reduced to a minimum.

This type of span resolves itself, from an operating standpoint, into practically an elevator proposition, the weight of the span being balanced by means of large concrete counterweights connected to the span by means of steel cables operating over sheaves located at the top of the towers on either side of the span.

The bridge is operated by means of two 125-horsepower motors, which are directly coupled to a train of gears located in the machinery house on the top of the span. This reduction gearing, in turn, operates the bridge by means of steel cables. The lift-span is guided in raising or lowering by means of steel roller bearings operating in the guides located in the vertical uprights of the towers.

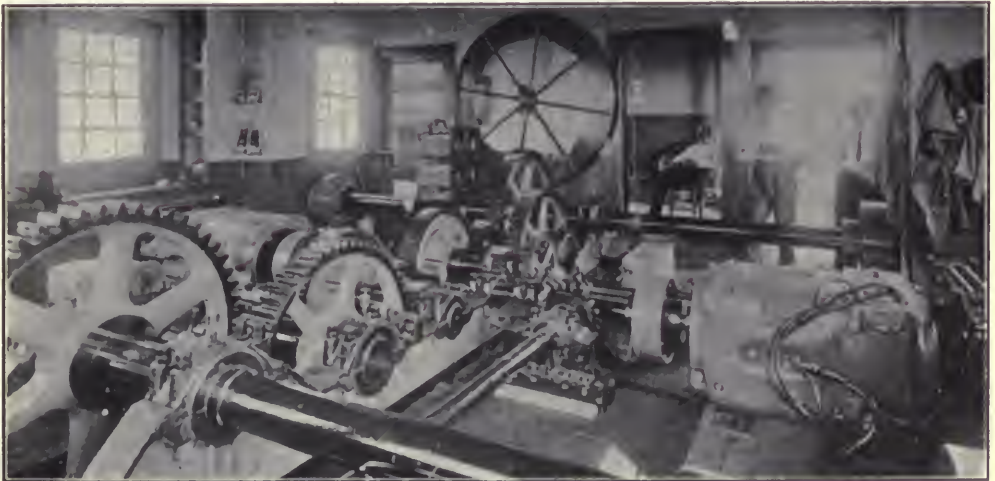
Besides the advantage of greater speed in operation, and consequently less delay to the traffic, this type of bridge presents other advantages from an engineering standpoint. There is no unequal expansion or contraction, due to the effect of the sun rays, as would be the case with the draw-span type pivoted in the center; the wind friction is practically negligible, and a channel equal in width to the entire length of the lift-span is offered for navigation.

The bridge was designed by Waddel &



BRIDGE WITH DRAW IN POSITION

Harrington, consulting engineers, Kansas City, Mo., and was erected under the supervision of Mr. Leon Clarke, engineer in charge. The electrical equipment, including the motors and control equipment, was furnished by Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa.



INTERIOR VIEW OF MOTOR HOUSE FOR OPERATING LIFT SPAN

How to Make the Best Use of Motorcycles in Municipal Service

By Frank L. Valiant

THERE is an old adage to the effect that "it takes a thief to catch a thief."

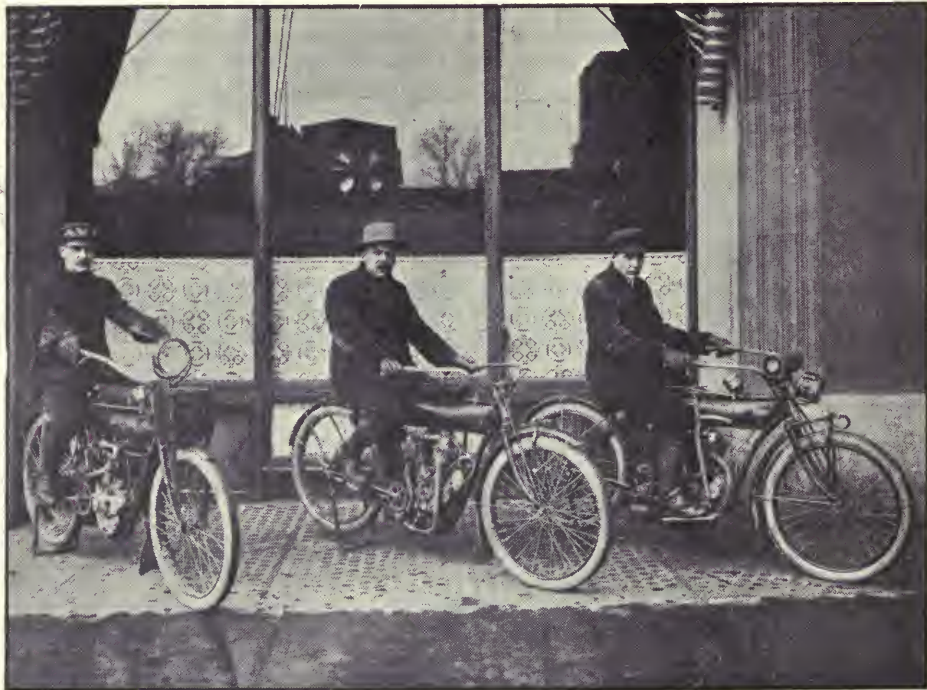
How literally true this may be is a proposition that could be argued indefinitely. The application of the above remark will be readily appreciated in the following paragraphs.

Whether the manufacturers themselves are willing to admit it, the fact remains, nevertheless, that municipal work has done more toward demonstrating the efficiency of the motorcycle beyond the bounds of merely pleasure than any other one item.

The use of motorcycles in municipal service was originally begun by the police departments in a few of the larger cities as a means of eliminating some of the reckless speeding of automobilists. There were very good reasons for favorably consider-

ing the light, speedy, economical motorcycle as the surest and cheapest means for bringing careless drivers to a full appreciation of their wrongdoing. As a result, the motorcycle cop became a "bird of prey," a Nemesis to speeders; and there are now few American cities whose police departments do not boast of more than one motorcycle officer.

Because of the pioneer work accomplished by police departments, the efficiency of the little two-wheeled motorcycle has been demonstrated in other branches of municipal work. Motorcycles are now being used not only by traffic policemen and the men who "go after" fleet automobilists, but they are used by water inspectors, supervisors of parks, tenement inspectors, inspectors of weights and measures, super-



THESE DENVER POLICEMEN, ON THEIR MOTORCYCLES, HAVE TAKEN THE PLACE OF MOUNTED OFFICERS IN THE OUTLYING DISTRICTS



EIGHT BIG "HUSKIES" OF THE KANSAS CITY (MO.) POLICE DEPARTMENT TESTING THE FRAME OF A FLYING MERKEL MOTORCYCLE

visors of public playgrounds, and by many other municipal officials whose duties require a swift and economical means of transportation.

While motorcycles nowadays are dependable vehicles and made as nearly fool-proof as their manufacturers can construct them, I have found by personal investigation covering a period of more than a decade that municipal officials have not generally given the motorcycle man the proper opportunity to show his worth and the value of his machine.

In many cases the municipality will purchase a motorcycle, select as its pilot a man who has ridden a bicycle at some time or other, give him some of the city's gasoline and oil and then expect the man to go out and produce wonderful results.

It is not to be expected that the motorcycle man can immediately attain a 100 per cent degree of efficiency. At the time of his initiation Mr. Motorcycle Man is the veriest kind of a novice, and frequently just about the time he is beginning to make himself useful he is transferred to some other duty and another new man broken in.

A motorcycle is like any other piece of machinery; it must be well oiled and carefully watched in order to deliver maximum efficiency. Yet many people expect a little four or seven horsepower engine to do pro-

portionately twenty times the amount of work required of a giant locomotive, and this without being overhauled or attended to more than once a season. The big locomotives can scarcely make a run of a hundred miles without going to the shops; and the fact that a motorcycle can travel from 5,000 to 15,000 miles without spending one cent on it for repairs, if reasonable care is taken of its working parts, is indeed wonderful.

I believe that much greater efficiency can be obtained from the motorcycles now being used in municipal work by encouraging the men to take a personal interest in their machines. If some sort of recognition or award were offered to the man whose machine showed the smallest upkeep expense during a specified period, the men would have an incentive to keep their machines in good repair all the time and the city's repair bills would be reduced to a minimum.

Properly encouraged, a man will always take a personal interest in his particular mount. The great drawback at present is that a majority of the men riding motorcycles are not intimately acquainted with the mechanical construction of the machine. I would further suggest that the various municipal departments subscribe to the two leading motorcycle papers which are published weekly, and allow every man riding a motorcycle to read these periodicals dur-



M. C. SCHENCK, SUPERINTENDENT STREET DEPARTMENT, KINGS COUNTY LIGHTING COMPANY, BROOKLYN, ABOUT TO MOUNT HIS IVER-JOHNSON MOTORCYCLE

ing his leisure hours. These papers contain valuable information from time to time which cannot be obtained in any other way, and the small initial cost of subscription would be saved fifty times over in one month's repair bills.

Personally I have ridden various makes of motorcycles for many years, and when I began I did not know the slightest thing about mechanics. All the information I

received was through actual experience and reading the motorcycle publications, but I can point with pride to the fact that my repair bills have been considerably less than for any motorcycle I ever heard of in municipal service. The same experience could be had in every department employing motorcycles by carrying out a few very simple rules, which will be set forth in detail in a subsequent article.

Lynchburg's Island Playground

LYNCHBURG, VA., has one of the most unique and complete playgrounds in this country. It is an island of 31 acres, situated almost in the heart of the city. The island was given by one of the business firms of Lynchburg, and the citizens gave \$24,000 to equip it as a playground. Every known athletic and recreational feature can be indulged in on this island. It was opened last June, and during the summer more than 37,000 people, boys and girls, men and women, used it constantly. The property is controlled by the Young Men's Christian Association, but the whole city can enjoy its privileges.

The equipment consists of a commodious

club house with shower-baths, dressing-rooms, lockers, a café and big social lobby. Beside the river for expert swimmers, an immense swimming pool is used for teaching swimming and for those who are not expert. There are two baseball diamonds, nine tennis courts, croquet grounds, a large boat house with row boats, canoes and launches, plenty of room for small children's playgrounds, camping, golf, etc.

As additional money is secured the island will be improved and beautified. It is connected with the city by a bridge, and the whole surrounding is picturesquely beautiful and healthy.



THE ISLAND PLAYGROUND



TOWN & VILLAGE

A Concrete Case of Village Improvement

A New Department in
Which Special Attention
Will Be Given to Municipal
and Civic Problems
in Communities of Less
than 5,000 Inhabitants.

By Frank A. Waugh

Professor of Landscape Gardening, Massachusetts Agricultural College

AN intelligent program is one of the greatest needs of village improvement work in most communities. In my judgment, in order to extend this work and make it more effective, it is necessary to adopt such definite, well-considered programs. However, it is interesting and instructive from time to time to lay aside theoretical considerations and engineers' plans in order to observe results in particular cases.

Civic work in small communities has long had a vital hold in many Massachusetts towns. The whole modern idea of village improvement organization is usually said to be of Massachusetts origin, being generally credited to the town of Stockbridge, but many other towns, many of them more distinctly rural and less wealthy, have accomplished results just as praiseworthy. One of these towns in which I have been much interested is Georgetown, in the northeastern



IN LYNCHBURG, VA.

part of Massachusetts. It will give some idea of the scope and depth of this work if we merely review the definite projects which have been under way during the present year. Some of these represent things finished; others are works now under way; still others stand chiefly as plans, but plans upon which actual progress is being made.

First of all, Georgetown has a thoroughly live village improvement organization under excellent leadership. My experience convinces me that strong personal leadership is the first requirement in work of this kind. The principal definite undertakings of this organization may be outlined as follows:

1. A simple but important common at the center of the village has been cleared up and improved during the last year. Before that time it was in a very unsightly condition. It is now about to become one of the most attractive central squares in any New England village.

2. Electric lights have been installed during the year throughout the principal streets. This has involved the placing of a considerable number of poles, which, of course, are not ornamental, and has raised the question of injury to shade trees at a number of points. The shade tree matter has been rather carefully looked after by the tree warden and the officers of the improvement society, and it seems likely that the shameful damage which often occurs in such work will be wholly avoided in Georgetown.

3. New road signs have been put up in the town. Considerable thought and good taste have been applied to this problem, and the signs are decidedly attractive.

4. The town commons have been cleaned up by a man hired to do that work regularly, and seats have been bought and placed at convenient points.

5. Various roads and streets in the town need improvement, and the society is working to secure better results along this line.

6. There is a beautiful lake in the town, lying within a few rods of the center of the village. This lake is surrounded by good trees, and presents most attractive scenery. In former times it has been used for swimming by the boys, and for boating, skating and similar sports by all. At the present time, however, the entire shore is owned by private parties, and the public is being

rapidly excluded from the lake. The village improvement society has realized that the public should be allowed to have access to the lake, and that a reservation should be secured at once. A highly valuable tract of land on the lake shore has been found and has been offered to the town by one of the citizens at a very moderate price. Probably its acquisition by the town will follow in the near future, and a most substantial benefit will be conferred on the citizens for all time to come.

7. The boys need a ball field, but it appears on investigation that they will be allowed to use a first rate field on the grounds of the Peabody School. This is a chartered institution and not in control of the public, but the arrangement seems to promise a solution of the ball field problem for several years to come.

8. A playground is greatly needed for the Central School. This school occupies an attractive building in a convenient central location, but has no playground. There is open land adjoining the school lot, and it seems probable that a little work and study will make some of this vacant land available for this very desirable improvement.

There are two or three other matters of equally great importance which, however, have not been developed to the point where they should be freely discussed in print. Various public-spirited citizens, however, are working on these questions and are in line for still more good things for Georgetown.

* *

Rural Recreation

A recent issue of *The Playground* is devoted to the subject of recreation in the country, particularly to what the rural churches are doing to meet the great need of both old and young for pastimes that give moral tone to the whole community. A strong plea is made for the teaching of home and farm management so that there may be some leisure time for the farmer's wife, some opportunity for expansion of interest, so that city women and country women may meet each other half way.

The material contained in this issue, with other speeches and discussions dealing with the same subject, will later be published in a Rural Recreation Handbook containing about one hundred pages. The price of this book will be 75 cents.

Organization of Town Highway Departments

By Fred Buck

Assistant Deputy Commissioner, New York State Highway Department

THE enactment of the present highway law of New York State created a system of highways connecting the principal centers of population of the state to be known as State Routes, these to be improved at the sole expense of the state. Jointly with this improvement was to be carried forward a contemporary system known as County Highways, these county highways being the principal tributary highways to the state system before mentioned and to be improved at the joint expense of the state and county under state direction. By the same law was also created the organization known as the Bureau of Town Highways, this Bureau to have charge of all highways of the state not included in the state or county system.

In each town of the state is elected biennially an officer known as the Town Superintendent of Highways who has charge of all work connected therewith, hiring the necessary labor, procuring the necessary material and giving personal supervision to the execution of plans for the highway work in his town. In each county is an officer known as the County Superintendent of Highways, appointed by the Board of Supervisors of the county. The County Superintendent has general charge of all town highway affairs in his county, giving advice, assistance and directions to each Town Superintendent as the need therefor appears.

The revenues for the repair and maintenance of town highways are derived from taxes levied in each town for the maintenance of the highways within the town. These taxes are supplemented by moneys paid to the different towns by the state for the same purpose and forming, in connection with the taxes before mentioned, a common fund known as the Highway Fund. The amount to be paid by the state to the several towns is annually appropriated from the general funds of the state and is determined by the assessed valuation per

mile, the state aid being graduated according to the valuation, varying from 100 per cent to the poorer towns to 50 per cent to the most wealthy ones. The giving of this state aid allows the State Highway Commission to have direction and control of the highway work as carried on in the various towns. For the purpose of this state supervision and control the state is divided into ten districts, each in charge of a representative of the State Highway department known as a District Supervisor, who has general charge of all town highway affairs within his district. The representative of the State Highway Commission in direct charge of the Bureau of Town Highways is a deputy commissioner, whose duties relate entirely to the town highway organization and who is the officer directly superior to the district supervisor.

Previous to the organization of the Bureau of Town Highways, the town highway work was carried on under the old "Commissioner" or "Path Master" system, each carrying on the work during his term of office according to his own ideas without any relation to that being done by his neighbor or that which had been done by his predecessor. The result was the hodgepodge with which everyone is familiar and which needs no description. With the installation of the present organization a general plan was adopted, the intention being to perform the work in each town along definite lines with a view to doing the work in such manner as would form a harmonious part of such work as might be done in succeeding years in the same town, and also bear the proper relation to the work being done in adjoining towns.

The actual results accomplished during the four years of the life of this organization have been little short of marvelous. Under this plan over 70,000 miles of highways of the state have been put in such condition that except for a very short period in the spring and fall they may be traveled in comfort and safety by vehicles of any character. By a careful husbanding of the resources, funds have been accumu-

*From a paper presented at the Cleveland meeting of Section D of the American Association for the Advancement of Science.

lated by means of which over 6,000 miles of town macadam roads have been built by the different town superintendents—these, while comparatively low in cost, being of a character sufficient for the traffic needs thereof. In like manner over 8,000 miles of good gravel roads have been constructed. When it is remembered that these improvements have been accomplished by the expenditure of a fund averaging about \$40 per mile per year, the effectiveness of the organization may be realized.

Culverts and Bridges

The accomplishments of the different town superintendents under the direction of this Bureau, in the construction of permanent culverts and short span bridges, are such as would have been deemed absolutely impossible four years ago and are of an extent and nature which have surpassed the fondest hopes of the originators of this plan. Directly after the organization of the work a special bulletin on the construction of culverts and short span bridges was issued by the Bureau and a copy placed in the hands of every town official in the state. In this bulletin plans were given covering practically all possible conditions of traffic requirements for bridges of reinforced concrete up to and including a 30-foot span. Working drawings of the plans outlined in this bulletin were prepared in quantities sufficient to meet the needs of all inquirers; and town superintendents everywhere were urged to take up the matter of constructing their own bridges, using their own local labor and local materials as far as possible in preference to contracting for steel structures, as had been the almost universal practice previously. This idea has gained growth to the extent that in 1911 in seven

counties of the state every structure of this character which was erected during the year was built by the town superintendents in the manner before mentioned, not a contract being let in any of those seven counties for any short span bridge; and in the state at large over 70 per cent of the bridges were constructed in a similar manner. The figures for 1912 have not at this date been compiled, but enough are now at hand to show that the work of 1911 will be considerably surpassed by that of 1912. A careful comparison of the saving effected by this item alone, made up from the most reliable figures of cost of former construction which are available, shows that in 1911 the total saving in the various towns amounts to not less than \$350,000 cash. In addition to this there should be taken into consideration the great additional value of these permanent structures as against the flimsy affairs which were erected under the old contract system.

While it is realized that many improvements may be made and that the organization as a whole has many weak points, still these defects appear to be matters of detail and not defects in the fundamental plan. No scheme of improvement for the highways of any commonwealth is complete unless it contemplates the improvement of the entire system of highways in some manner. From the experience of the organization of the Bureau of Town Highways in this state it is believed that 88 or 90 per cent of its highways which any commonwealth will find it impossible to improve during the present generation cannot be dealt with in any other manner so effectively and so satisfactorily as through a well-equipped, thoroughly organized Bureau of Town Highways.

Letters to the Editor

Arousing the Public Sentiment Against Billboards

To the Editor of THE AMERICAN CITY:

The paper on Billboards, by Raymond B. Fosdick, of New York City, as published in your December number, is, doubtless, historically correct and may be helpful to those who, some day, will write the obituary notices of "Outdoor Advertising." That it will hasten the occasion for such writing

is doubtful, unless it is followed by a persistent and vigorous effort to create public sentiment against what the *Christian Science Monitor*, of Boston, in its war on billboards, calls "Selling the Public Eye"—that is, forcing people to read the "shrieking" advertisements at the expense of their esthetic taste.

Experience has taught me that no civic betterment, be it ever so good, can be had

and enforced until the public is made to see its importance and wonder why in the world its coming has been so long delayed. Also, by experience, I have learned that the way to reach the people is for those who know what is needed to write about it to their newspaper; and the way to make it most effective is for the writer to sign his real name. Feeling sure that the "letters from the people" part of the newspaper is the most read, I occupy as much space there as possible with the things I want done—the things that ought to be done. Sometimes it takes years of persistent preaching and arguing, but, so far, I have never failed to get what I went after.

In the case of billboards, I would not attack the bill *posters*, but I would go after the unsightly and otherwise offending *signs* with insistent arguments—short, accurate stories; using humor freely, ridicule sparingly and little words abundantly. The inertia and stolidity of my reader I would bear patiently!

Even the judges of our higher courts may, after a while, learn that outraging the esthetic sense is physically as hurtful as is outraging, with whistles, bells and street cries, the sense of hearing. The esthetic sense, or taste, is most largely developed in those least able to protect themselves—people of gentle refinement, who stand for things beautiful and for things that help to keep our morals from going to the dogs. The typical billboard sign worries such people, just as bad odors worry the less sensitive. If, as has been abundantly shown by experts, worry is more deadly than germs, then all those who are worried should be protected alike, whether it is the eye, ear or nose that is offended.

EDWARD A. ABBOTT.

Chattanooga, Tenn.

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Flagstuffs in Public Parks

To the Editor of THE AMERICAN CITY:

I have yours of yesterday, asking as to the erection of "an ornamental flagstaff on a granite or other suitable base in the main public park of a New England city." You advise me that for this purpose \$4,000 has been contributed by a citizen, and you ask whether I know of any place where a structure of the same nature has been erected.

I have seen a number of flagstaff erections in public parks or reservations. I re-

gret to say that most of them have been incongruous and unpleasant, usually detracting from the beauty of the place as well as from the dignity of the flag.

It is a laudable thing to display the American colors at proper places at proper times. The disposition of American cities seems to be, however, to use the colors in a fashion which makes the display ludicrous or absurd. I have in mind, and indeed could supply pictures of instances where either a wooden or steel flagpole has been erected close to a monument in a public park, with the added adornment near by, in each case, of a large telegraph pole. The result was, as might be foreseen, to divide interest between the three objects—the monument, the flagpole and the telegraph



AN INCONGRUOUS GROUP
Flag-staff, monument and telegraph pole



AN ARTISTIC SETTING FOR FLAGPOLE AND SCULPTURE IN LIBRARY PARK,
PASADENA, CAL.

pole, and I am compelled to say that in each case, so far as impressiveness and suitability to its purpose are concerned, the telegraph pole won the most interest and was the best handled structure.

I do not know that any designs have been made for such an erection as you propose. I do know that it would be practicable for a capable landscape designer to suggest such an erection after knowledge of the location and surroundings.

A relatively monumental structure could be made in connection with which the colors could properly be displayed, but obviously it would be desirable that this erection be in a place where it would be the sole object of interest, and not, as is quite frequently the case, where the interest is divided with other unrelated objects, or where the flagpole seemed to take place as an intrusion.

My suggestion is, therefore, that you recommend to the authorities in this case to confer with some capable landscape de-

signer who might view the situation and make a proper proposal for a design.

It is not so very long since I was instrumental in preventing the hanging of a flag between two beautiful memorial columns, where the result would have been absurd and an insult to the emblem of the nation it was sought to dignify. We need, in fact, to do better thinking about the American flag and to treat it with more real reverence and less sloppy adulation. The extreme of absurdity in connection with the Stars and Stripes occurred when I saw President Taft address a great gathering in the Belasco Theater in Washington, his hand resting on a ridiculous little hour-glass stand which had been hastily wrapped in a large American flag, much of which, in consequence, trailed the floor. This was misplaced patriotism—to give it a mild designation.

J. HORACE MCFARLAND,
President American Civic Association.

The Relation of Sculpture to Parks*

By Herbert Adams

AS a sculptor, possibly I am expected to believe that parks should be bountifully supplied with examples of our art; but, as a matter of fact, I feel that the naturalistic park can get along very well with little from our hands—can be spared to advantage even the bronze panther crouching on the cliff, half concealed in the foliage.

In this country, I believe we are far too prone to place the statue of our hero or our honored citizen on the sloping bank hard by the popular drive or walk in the naturalistic park, to surround the pedestal with a mound of bedded plants, and then to rest secure in the satisfaction of having at once honored the dead and beautified nature. Perhaps we have dragged a rugged boulder to the lawn, mounted our hero on that, and then congratulated ourselves that we have been very artistic, while, as a matter of fact, we have only been avoiding the architect—or rather the cost of executing his design

for a setting. The boulder idea in general, I believe, is one to be persistently discouraged.

Certainly I believe that sculpture may be successfully used in connection with the naturalistic park; but this will be accomplished, not by dropping it down here and there, with reference solely to its conspicuous placing, but rather by treating some spot or portion in the park in a reasonably formal manner, and using sculpture in connection with such treatment. In fact, it seems to me that the approach or entrance to the naturalistic park offers especially good opportunity for sculpture; indeed, if properly designed, it affords ideal possibilities for the sculptor's art. I believe the approach could be designed so that it would present a satisfactory ensemble before all, or perhaps any, of the sculpture was in place, thus providing suitable sites for the sculpture of the future. Of course the general character of the sculpture which was to be added would have to be worked out with the general scheme, and safeguards taken that this scheme should be adhered to.

*Extracts from a paper read at the forty-sixth annual convention of the American Institute of Architects, December, 1912. The full text will appear later in the *Journal of the Institute*.

We sculptors, therefore, beseech the designers of American cities to give a little thought to the sculptural monuments of the future when planning parks, avenues and civic centers. A work of no extraordinary intrinsic merit is sometimes made impressive and important by its setting, while a work of high artistic quality may utterly fail to give its message, purely because it lacks the advantages of suitable setting and location. Architects understand even better than sculptors the significance of scale, the value of vistas and axes, the necessity of keeping each part of a plan in proper relation to the whole scheme.

There is one essential point, however, which in general has been more fully appreciated by the sculptor than by the architect. This is the rather universal importance of having the sun back of the spectator when he is looking at a statue. If a statue which stands in the open is between the sun and the spectator, of course all modeling is wiped out, and silhouette alone is seen. The sculptor, therefore, likes to face his work south whenever possible, and is particularly unhappy whenever it has to be faced north. This is by no means to

underrate the value of silhouette, which will always remain an important factor in any achievement in the round.

In locating a public work in sculpture, especially whenever it takes the form of a memorial, there is one element which often prevents the best result, in the broadest sense of the word. This difficulty is the desire, on the part of the promoters, and often, I regret to say, on the part of the authors, to have the work given a position where it will be seen by the largest number of people—a desire which sometimes warps the judgment. This is one of those elements in human nature that make no end of trouble for the Art Commission of New York. The promoters of nearly every monument or statue ask first for one of these four sites: City Hall Park, Union Square, Madison Square, The Plaza. The policy which has been pursued for so many years has pretty well discouraged people from trying to get their monuments into Central Park; but there is a constant demand for the other places; everyone seems to feel that his monument has some special fitness for one of these four desirable sites.

Some Legal Notes of General Interest

By A. L. H. Street

Restricting Fares in Street Railway Franchises

A street railway franchise granted by a municipality may validly provide that the rate of fare between points inside the city limits and certain outside points shall be five cents. (New York Court of Appeals, Public Service Commission vs. Westchester Street Railway Company, 99 Northeastern Reporter, 636.)

Duty of City to Water Consumers

A city maintaining a water works system is not liable for failure to supply suitable water for peculiar and uncommon uses to which it is put by a particular manufacturer, if the service afforded consumers in general is reasonably satisfactory. (New York Court of Appeals, Oakes Manufacturing Company vs. City of New York, 99 Northeastern Reporter, 540.)

Effect of Waterworks Franchise

Charge by a water company for a service pipe from the main to the lot line of a consumer is not authorized by a provision in the company's franchise, authorizing it to make rules and regulations for the use of water. That provision relates only to the use of water. (Washington Supreme Court, State vs. Hoquiam Water Company, 127 Pacific Reporter, 304.)

Sale of Municipal Bonds

Prohibition in a municipal charter against the sale of bonds at less than par is not violated by allowing the purchaser of a \$25,000 issue bought at par, \$1,000 to cover legal services and other expenses incident to the transaction, such as lithographing the bonds, etc. (Tennessee Supreme Court, Miller vs. Park City, 150 Southwestern Reporter, 90.)

Invalid Anti-Smoke Ordinance

An ordinance of Jersey City forbidding the emission from any engine or locomotive stack, within the city limits, of smoke containing soot or other substance in sufficient quantity to cause injury to the health or damage to property within such limits, was held unreasonable as to a railroad company operating in such municipality, because in derogation of its right to emit such smoke as is reasonably necessary for its proper operation, in an opinion recently reached by the New Jersey Supreme Court in the case of *Erie Railroad Company vs. Mayor and Aldermen of Jersey City*, 84 Atlantic Reporter, 697.

Validity of Municipal License Regulation

A city has such control over sales of milk within its limits as to be authorized to provide by ordinance for a licensing of milk dealers, under provision that no license shall issue until the dealer submits his herd and dairy to inspection, whether they be located within the city limits or within twenty miles thereof, and that a license may be revoked on the dealer's premises becoming insanitary or his refusing inspection thereof. (*Pennsylvania Supreme Court, Hill vs. Fetherolf*, 84 Atlantic Reporter, 677.)

Free Transportation of Police Officers on Street Cars

The statute enacted by the New Jersey legislature in 1912, requiring street railway companies to grant free transportation to police officers, is valid and enforceable. There is an element of compensation for carrying them in the fact that their presence on the cars tends to diminish unlawful acts against passengers for which the company might be held liable. (*New Jersey Supreme Court, State vs. Sutton*, 84 Atlantic Reporter, 1057.)

Enjoining Enforcement of Water Rate Ordinance

A water company which claims that an ordinance fixing the rates which it may charge is invalid as being confiscatory, need not wait actual operation under the ordinance before suing to enjoin its enforcement, though, of course, the company must

clearly establish the fact that the rates will prove confiscatory. (*United States Circuit Court of Appeals, Seventh Circuit; City of Kankakee vs. American Water Supply Company*, 199 Federal Reporter, 757.)

Water for City Purposes

The establishment and maintenance of a fountain at the intersection of two principal and much-traveled streets, for quenching the thirst of animals using the streets, is a "city purpose," and a water company, under a contract with the city which requires it to furnish water to the extent of 12,000,000 gallons every six months free of charge for city purposes, cannot collect from the city for water supplied to such fountain. (*New Mexico Supreme Court, Water Supply Company vs. City of Albuquerque*, 128 Pacific Reporter, 77.)

Valuation of Public Utilities

While in appraising a gas plant, to determine the reasonableness of rates fixed by ordinance, the cost of reproduction may be considered, it does not in itself furnish a reliable measure of value, as, for instance, where in computing such cost experts have included a large expense for replacing pavement, a large part of which has been put down since the pipes were laid, and when there is no present need of their renewal, since it would be inequitable to capitalize such sum and permit the company to earn dividends thereon. Nor is the company's good will, the monopoly given by its franchise, an item to be included in estimating the value of its property; but the value of the plant as a "going concern" is proper to be considered as an element of the present physical value of the plant. (*United States District Court, Southern District of Iowa; Des Moines Gas Company vs. City of Des Moines*, 199 Federal Reporter, 204.)

Power of City to Tax Occupations

A city cannot lawfully impose a license tax on an occupation unless so empowered by its charter or by the legislature. (*Illinois Supreme Court, City of Chicago vs. Drogasawacz*, 99 Northeastern Reporter 869.)

The Relation of Contractors to Public Officials

By C. A. Crane

Secretary, the General Contractors' Association

JUST as honest officials are in the majority, so are honest contractors in the majority, and they are equally anxious with honest officials and the public generally that the contracting business shall be put on a legitimate basis, which will afford every opportunity for honest competition and minimize favoritism and graft. Since we must all confess, however, that the relations between contractors and officials are not always above suspicion, the problem is to remove the opportunity for suspicion.

Why not adopt the policy of the hotel keeper who announced on his bill of fare that "to prevent fruit being taken from the table, there will be no fruit"? Cut out all personal relations between contractors and *political* public officials, and let these relations be through the proxy of the engineering official. Choose a big man in his profession and pay him a big salary, putting him under a heavy bond to guarantee the accuracy of his work and the validity of his certificates of payment. Why should a disbursing officer be held responsible for an engineer's voucher, unless he has equal facilities for checking the work that the engineer had in computing it? Centralize the power and the responsibility.

Engineers Should Be Well Paid

A serious mistake made by public officials is to underestimate the necessity for paying high salaries to engineers. Well-paid positions will attract a higher grade of men and remove the temptations which beset the path of the under-paid engineer. The men in the field are relied upon by both the chief engineer and the contractor, and the greatest risk the contractor assumes lies in the ability of this sub-engineer to whom is delegated the power of interpreting the contract.

The success of a contract lies in its execution—not in its wealth of legal protection for the contractee. Take any contract issued to-day for public work to a lawyer and ask his opinion of it. He will tell you

a man is a fool to sign such a document. It is so drawn as to provide every safeguard for the contractee, and to place entire responsibility for everything that may happen, including the acts of Providence, up to the contractor. He literally signs away all his rights in the present and hopes for the future. This is not the work of the engineer, but of the legal officials.

But the contractor wants the work, and in the contracting business three qualities are essential—faith, hope and nerve, and the greatest of these is nerve. Nerve to disregard counsel's warning, faith in his own ability to do the work, and hope that the engineer in direct charge of his work will give him a square deal.

It is impossible to over-emphasize the importance of the relation of this engineer who is in direct charge. He is called upon to give immediate decisions on important questions, in the absence of his superiors. He is clothed with all the powers conferred in the contract, and these are liable to be over- rather than under-exercised by the too zealous and inexperienced engineer. Care in the selection of his deputies and personal attention to their training by a chief engineer are tremendous factors in securing harmonious relations with the contractors. Constant bickering prevents good work, and the chief engineers who have been most successful are those who have infused in their subordinates the realization that tact and diplomacy win more battles than obstinacy.

The Chief Engineer as the Arbiter

Most contracts designate the chief engineer as the arbiter of all disputes over the amount and fitness of the work, his decision to be final and binding on the contractor, but this power is usually qualified elsewhere in the contract by providing that the engineer's decision shall be subject to the final determination of the commissioner or the board, as the case may be.

This qualifying clause might easily become a mischief breeder. Any loopholes which permit the slightest chance for ques-

* From an address before the last annual convention of the American Association for Highway Improvement.

tionable dealings between contractors and officials should be guarded against. The days of the contractor with a "pull" are passing. Even the simplest class of public improvements is now supervised by an engineer. The less that contractors and commissioners come in contact the better. The commissioners' attention should be devoted to the administrative details—with matters pertaining to construction left to the engineers. The engineering profession fortunately ranks high in integrity, and the unfortunate cases in which scandal has entered into the contracts are but rarely charged to any dishonest acts by, or collusion with, the engineer.

The objection raised to allowing the engineer to be the final judge as to the quantity and fitness of the work, is that since he is paid by one of the parties to the contract he is naturally biased toward his employer, but it is generally conceded that in the majority of cases the engineer who has designed and supervised the work is best fitted to make the decisions. There are many questions, however, which arise that are not concerned solely with quantity or quality—questions of judgment or questions of proper interpretation, and we believe disputes of such nature should be submitted to arbitration. No honest and capable engineer fears or can object to any scrutiny of his work by an equally competent fellow engineer, and, therefore, an appeal from his decision should be allowed before a referee competent to pass upon the technical matters involved. This is the only form of appeal which should be permitted in the contract. An appeal to the board or to a commissioner can be made only for the purpose of securing through friendship, or worse, what the engineer will not allow; and if the board of commissioners is honest and has confidence in its engineer, it naturally will deny the request. The position of the engineer who would be asked by his board to alter his determination would be exceedingly unpleasant. He would be in the dilemma of refusing to obey orders or of certifying to something against his judgment. Engineers are human and jobs are not always plenty, and we realize that engineers have their troubles as well as contractors. To avoid such dilemmas, the engineering profession should demand a form of contract providing that their rulings

could only be reversed by arbitration before a member or board of their profession.

Contracts Should Be Drawn by Engineers

We realize that there are many questions of law involved in contracts that are often the subject of division even by members of the bench, but we submit that if the preparation of the entire contract, as well as of the specifications, was left to the engineer, he would at least be able to prepare as comprehensive a document as the lawyers, and there could hardly be any question involved which another engineer could not understand for the purpose of making a fair decision. A suit at law is not the most satisfactory way to settle a dispute which really hinges on the question, Was the work done as it was intended and represented in the contract? Lawyers naturally look for legal points of attack and defense, and many a case has been decided on purely legal technicality far beside the equity of the suit.

This arbitration scheme has been tried out in many forms, and unfortunately no method has yet been adopted that seems satisfactory. The Rapid Transit Commission in New York City some years ago provided that an appeal from the chief engineer's decision should be submitted to a board consisting of one arbitrator chosen by the commission and one by the contractor, and on the failure of these two to agree they were to select a third. It is obvious that the decision thus really lay with the third man, and it would seem a short-cut to name the third man first. After several years' trial by the old Rapid Transit Commission and the present Public Service Commission, the scheme of arbitration has been dropped, since it proved quite as costly as, and consumed as much time, if not more than, the regular court procedure.

A British Arbitration Scheme

The Council of the Institution of Municipal and County Engineers recently adopted a modification of the clause which formerly made the engineer the sole arbiter of disputes. The Council recommended the adoption of a clause submitting the dispute to a single arbitrator to be appointed by the President of the Institution, the award of such arbitrator to be final and binding upon the parties. The nature of the ques-

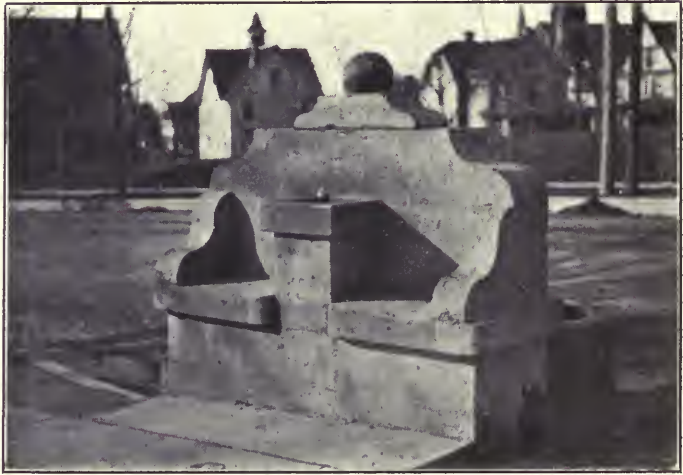
tions to be submitted for arbitration is to be confined to the interpretation of the contract or any matter arising thereunder—but not on decisions as to the quantity and fitness of the work—and also as to the withholding by the engineer of any certificates to which the contractor might claim to be entitled. The

arbitration is not to apply to any contract amounting to less than \$5,000, and no question involving a sum less than \$250 shall be submitted. We believe that some such measure might well be considered by our public officials. It would minimize litigation and thus remove one of the greatest sources of friction.

Concrete Fountains for Man and Beast

By Earle S. Holman

UTILITY and permanence, combined with simplicity and beauty of design, were the ideals sought and realized in these concrete drinking fountains recently completed in the city of Janesville, Wis. The fountains were designed by Mr. C. V. Kerch, the city engineer, and constructed under his supervision by workmen in the employ of the city. Both are novel in that they furnish drink for man and horse and dog, and one of them is equipped with a



THE FOUNTAIN WITH THE PONY BOWL



DRINK FOR MAN AND HORSE AND DOG

special bowl for the use of small ponies. The horse bowl, an old cast-iron one neatly fitted into the fountain, is placed at a sufficient height to make the unchecking of horses when drinking unnecessary.

Each fountain is equipped with sanitary continuous flow bubbling cups of the most approved type. The bubbler fitted into the one shown in the upper picture drains into the pony bowl. The horse bowl has a separate water supply and also drains into the pony bowl. From this receptacle the water runs to the dog bowl shown in the bottom at the right, and from thence into the sewer. The sanitary cup in the lower fountain, set into the projecting table, supplies through its drain pipe both the horse and dog bowls. Each fountain has its own manhole, permitting convenient inspection and repair of supply and drain pipes. The only plumbing in the fountains is that used for the water supply, the drain passages being pierced in the concrete. They were made of large diameter so as to prevent clogging.



ROADS AND PAVEMENTS



Dust Prevention by the Use of Palliatives

By Arthur H. Blanchard, M. Am. Soc. C. E.

Professor of Highway Engineering in Columbia University, and Consulting Engineer, New York City

BEFORE considering the effects of dust and the methods of alleviating the nuisance caused by its presence, a study of the sources from which street dust arises may be of interest.

A self-evident source of dust is the mechanical abrasion by traffic of the road or street surface. It is manifest that the degree of abrasion will depend upon the amount and nature of the traffic, the kind of material used and the method of construction and maintenance employed. Other sources of street dust depending upon traffic are the deposition of dirt which has adhered to the wheels of vehicles coming from adjacent earth, gravel or macadam streets, from the leakage of the contents of loaded vehicles both in transit and while loading and unloading, and from the excrement of animals.

All street dust is by no means the result of traffic. In sections where shade trees are common, a source of dust is to be found in the decay of twigs, bark and leaves, while pollen, seeds and spores of various plants are further sources. Mineral matter applied to certain street surfaces to prevent slipperiness is a constant source of dust. Dust resulting from manufacturing enterprises frequently forms a very considerable part of street dust. Mills where pulverizing is carried on, textile establishments and foundries are prolific sources of dust, while soot and fine ashes from chimneys find their way to the streets. From the nature of these sources it is apparent that the composition of street dust is extremely varied and complex.

Dust an Enemy to the Public Welfare

Aside from its pathogenic effects, other ways in which dust acts as an enemy to the public welfare are as follows: The formation of heavy dust clouds by the traffic to such an extent as to obscure a view of the traveled way; when wet, the formation of mud, which may cause skidding of wheels and dangerous footing for both man and beast; its action as an abrasive agent upon certain surfaces; the lowering in real estate values where occurring in exceptional quantities; its harmful effect on plant life.

The pathogenic effects of dust have been given extensive study by the medical profession. From what has been said relative to the sources of dust, it is obvious that it is made up of organic and inorganic matter. If germ cultures are prepared from air, bacteria life of different kinds will be found present in quantities which are sometimes startling. Although it is very commonly believed that street dust is full of tuberculosis germs, many bacteriologists are not positive on this point. Dr. T. Mitchell Prudden states:

"It is certain that out of doors, in the country, and also in cities whose streets are kept decently clean, there is less danger of harm from the inhalation of germs of consumption or of any other disease, because the constant purifying agency of wind and air currents will either soon sweep away the dust or so largely dilute it that it will be practically free from disease germs, the sources of which are so comparatively limited. If, however, the streets of cities be or are allowed to remain filthy, so that abundant and pretty constant dust clouds are encountered by those passing through them; if the streets are not properly

sprinkled before sweeping, either by machine or hand; if ignorant or careless street cleaners are allowed to scatter clouds of dust about them as they sweep or shovel or transport the pulverized filth, the chances of inhalation of dangerous dust particles are proportionally increased. But, on the whole, the risk of infection out of doors from dust, even in crowded towns, unless they are notably filthy, is not actually very great."

Dust, however, may enhance the contraction of tuberculosis even though it contains no tubercle bacilli. The constant inhalation of dust will irritate the pulmonary organs so as to render them more susceptible to the attack of the tubercle bacilli which are frequently lodged in the mucous membranes of healthy individuals. Various delicate membranes are irritated by the simple mechanical action of the dust, resulting not only in local inconvenience, but many times in general debility. The membranes of the respiratory organs are susceptible to this influence, especially if a person be asthmatic. The membranes of the eye are also frequently seriously irritated by dust. In the sections where the dust problem has been successfully solved, physicians report a marked falling off in the number of cases of conjunctivitis.

The Problem on Heavy Traffic Streets

In considering the problem of dust prevention on city streets, it is advisable to classify the public ways under two general heads, business and residential streets, and to further differentiate between residential streets which are narrow, heavily shaded with trees and bordered with residences and those streets which are more or less open.

There is one way, and only one way, to satisfactorily prevent dust on bituminous, cement-concrete, brick, wood block and stone block pavements which are subjected to excessive horse-drawn vehicle traffic. That method consists of removing the dung of animals and other street refuse by hand sweeping, during the day; mechanical sweeping of the streets at night, which should be preceded by sprinkling, and finally flushing with water to remove fine dust and thoroughly cleanse the surface of the pavement. Under certain conditions, dependent upon the amount and character of traffic and the uses to which the street is subjected, it is feasible to omit the mechanical sweeping. It must be realized that

it is absolutely impossible to economically remove fine dust by either hand or mechanical sweeping. The use of the so-called dust palliatives and surface treatments on pavements subjected to heavy mixed traffic is entirely wrong in principle; for sanitary conditions require the constant removal of filth from streets and, if this is removed periodically by flushing, the effectiveness of these processes is curtailed. Again, periodically watering of pavements to lay dust throughout the day is fundamentally wrong, as the fine dust which necessitates sprinkling should have been removed.

However, bituminous, cement-concrete, brick and wood block pavements may be used on streets subjected primarily to motor car traffic and light horse-drawn vehicle traffic, such as boulevards, open intra-urban trunk lines, etc. In such cases flushing is not necessarily a prerequisite to cleanliness. Generally patrol hand sweeping throughout the day will be sufficient.

Where Palliatives Must Be Used

Residential streets may be built with bituminous surfaces or as bituminous pavements, dependent upon local conditions. On this class of street the traffic is usually comparatively light from the standpoint of city traffic. If such streets have a surface coat of the proper kind of asphaltic material, the dung of animals and other refuse can be removed by patrol hand sweeping, while the nature of the surface will be such as to absorb fine dust and render the street practically dustless. For macadam streets in poor condition for bituminous superficial treatments, or when financial conditions do not render expedient the use of bituminous surface treatments and patrol sweeping, recourse must be had to the use of palliatives. To attain successful results it is necessary that light products having the proper chemical and physical properties should be used in small amounts periodically during the season of dust. In slum residential districts the streets—unless subjected to heavy horse-drawn vehicle traffic—should, provided grades will permit, be constructed of water-bound macadam with a superficial coat of refined tar, or as bituminous pavements with a seal coat of refined tar. The gradient, however, may require the use of an asphaltic-tar compound or an asphalt for the superficial or seal coat. These forms of construction will

give a sanitary surface, one from which excess dirt, dung of animals and refuse can easily be removed by patrol hand sweeping and which, during the night, can be thoroughly cleansed by flushing. It should be noted that the nightly flushing with water will add materially to the comfort of the people by perceptible cooling of the atmosphere during hot summer nights.

It is evident that the field of usefulness of palliatives is somewhat limited and that this field will grow comparatively smaller in the future as the mileage of good roads and pavements increases, as the economics of construction and maintenance is understood and as the inherent value of the various methods for the elimination of dust is recognized. As an example of the tendencies outlined, may be cited the several yardages of bituminous surfaces and light oil applications as constructed during 1910 and 1911 under the state highway departments of Maine, New Hampshire, Massachusetts, Rhode Island, New York, New Jersey, Pennsylvania and Maryland. While in 1910, 9,890,400 square yards were treated with light oils, the yardage was reduced in 1911 to 3,765,200. On the other hand, while 2,557,600 square yards of bituminous surfaces were constructed in 1910, the total was notably increased to 8,414,100 in 1911.

European Practice

European engineers appear to appreciate the true value of palliatives, as at both the First International Road Congress, held in Paris in 1908, and at the Second Congress, held in Brussels in 1910, conclusions were adopted to the effect "that emulsions of tars or oils, hygroscopic salts, etc., are really efficient, but, unfortunately, only for a short time. Therefore, their use should be limited to special cases, such as race courses, festivals, processions, etc." In this connection it should be noted that the mileage of roads or streets which are not in a condition suitable for bituminous surfaces is small.

In Europe, however, attention to esthetics has resulted in the use of palliatives where otherwise bituminous surfaces would have been employed. Two illustrative examples will be cited. At the birthplace of the campaign against dust by the use of superficial tarring, namely, in the Principality of Monaco, ordinary watering is used to lay the dust on the boulevards surrounding the

beautiful gardens in front of the Monte Carlo Casino. The watering of these surfaces once per hour in the most scientific manner, the writer has observed, serves to lay the dust, cool the atmosphere, and furnish a road surface which is in harmony with its magnificent environments.

The other instance to be cited is the case of the Bois de Boulogne, which is adjacent to the city of Paris. Its engineer, although allowing one of the avenues to the race course, Longchamps, to be tar-coated for experimental purposes, is a firm believer in the use of palliatives for the boulevards of the Bois, inasmuch as the surfaces thus treated are satisfactory from the standpoint of esthetics, and at the same time dustless. The problem of the maintenance of the many miles of these charming avenues is an extremely complicated one, which has not as yet been solved. The avenues in many cases are subjected to traffic which will rapidly disintegrate ordinary macadam treated with any of the palliatives at present on the European market.

A Classification of Dust Preventives

Dust preventives in common use, which may be classified as palliatives, that is, those requiring application with more or less frequency, include water, sea water, salt solutions, calcium chloride, tar and oil emulsions and certain light oils and tars. As oils and tars are mentioned in the above classification, the distinction between treatments with palliatives and the construction of bituminous surfaces should be borne in mind. Palliatives are those which mitigate, alleviate or abate the dust nuisance; while bituminous surfaces consist of superficial coats of bituminous materials with or without the addition of stone or slag chips, gravel, sand, or materials of a similar character. While it is true that the continued reapplication of light asphaltic oils and tars may form a bituminous surface, the methods of construction considered under this latter title will be confined to those treatments which ordinarily result in a bituminous surface, efficacious for at least one year.

Water.—That water is an efficacious dust layer when properly applied is admitted by those familiar with European practice, especially where this work is generally under the direction of engineers who supervise the details of the methods of applica-

tion rather than depend upon the whimsical ideas of ignorant and irresponsible drivers of watering carts. From an economical standpoint, and when considered from the viewpoint of a road binder, the use of water is limited. It has been demonstrated by many service tests that watering, even when most scientifically administered, will not preserve macadam roads when the traffic consists of rapidly moving motor cars.

Sea Water.—The use of salt water obtained from the sea has not been developed sufficiently to establish its value and rating as a dust palliative. It has been tried in a number of instances in coast towns and cities, usually being applied with the ordinary watering cart. In one instance it was found that, in dry weather, it formed a hard, salty scale, while in wet weather the mud contained so much salt that it injured the iron and varnish of vehicles. John A. Brodie, City Engineer of Liverpool, in 1911 stated that:

"At Blackpool sea water is used almost exclusively for street watering, as it is found that sea water is about three times as effective in preventing dust as fresh water, and, if properly applied, has no injurious effects on the road surfaces. The Blackpool practice is really to wash (not sprinkle) the surface of all the principal streets, both horse and manual brushes being freely used in removing all loose matter from the street surfaces and washing them into the street gullies. A further annual cost of about \$45 per mile of streets is incurred in street watering only."

Oil and Water.—A method of mechanically mixing oil and water without the solvent has been devised. It consists of using a cart with two tanks, one containing the oil or tar and the other containing the water. The two substances are led through pipes into a box where they are thoroughly mixed by a set of rapidly whirling blades, which also force the mixture onto the road in the form of a spray, the idea being that the water will evaporate and leave the oil in a fine film.

Calcium Chloride.—This material is a by-product in the ammonia-soda process of manufacturing common washing soda and in other industrial processes. It is shipped in granulated form in air-tight steel drums. Calcium Chloride is used in two ways in connection with dust-laying on roads; First, by the "wet" method, and, second, by the "dry" method. When applied dry to the road surface, a special distributing appa-

ratus should be employed. About 1½ pounds should be used for an application per square yard. Usually two applications per season in the North will give good results. When applied wet, it is recommended that the calcium chloride should be dissolved at the rate of 1 pound to 1 gallon of water, using about 1/3 of a gallon of solution per square yard. For the application of the solution, ordinary watering carts are generally used. The usual method is to distribute in two applications along the center of the street and one at the sides. To secure freedom from dust about ten applications should be used per season in northern states.

The most scientific work which has been done with calcium chloride is that carried on by a Committee of Judges of the Roads Improvement Association of England in 1909 and 1910. After exhaustive experiments the following conclusions were deduced in the fall of 1909 and the spring of 1910 respectively:

"We are of opinion that the results of the tests of calcium chloride applied in granular form by the 'dry' method have shown that it is a very effective dust layer and, provided no ill effects are experienced in winter as a consequence of the treatment, we are of opinion it is a cheaper and preferable process to that of street watering, which, as now carried out, is undoubtedly very injurious to macadamized roads; . . . that the treatment has the ill effects of causing, during the winter months, an abnormal quantity of sticky mud, a decided tendency to licking up, and a disintegrating action upon the macadam surface. Notwithstanding this, we are of opinion that the process is probably not more injurious to macadamized roads than the excessive watering now demanded by the public effectively to lay the dust."

Emulsions.—Palliatives belonging to this class are made by the addition of some saponifying agent to water, which, forming a chemical solution, renders it readily miscible with the oil. They sometimes contain a deliquescent material as an aid in retaining moisture. Their use is common where a light palliative is sought. Alkalies such as potash, soda, ammonia, crude carbonic acid, and various soap solutions are the mediums most commonly used with asphaltic or paraffin oils. Among the numerous processes are: casein added to tar oil; water lyes from wood-pulp factories; fat or grease from wool scourings, emulsified with either deliquescent salt solutions or creosote; an oil emulsion containing a

deliquescent salt; waste sulphite cellulose liquor; waste-molasses solutions, and mixtures of saccharine and lime. Tar emulsions are used to a small extent in this country. Distribution is usually made with an ordinary watering cart on the unprepared surface, although better results may be obtained by using some type of pressure distributor. In one place a light sand coat was added, but as a rule the surface is left uncovered.

Light Oils and Light Tars.—In this group of palliatives may be included certain vegetable oils, paraffin and asphaltic petroleum, tar oils, water gas tars, coal gas tars, and a large variety of proprietary compounds. Light oils were employed in 1898 in Los Angeles and Algiers for the purpose of laying the dust. Their use has developed rapidly in America, due to the large supply available; while, as the price of oil is comparatively high in Europe, very little oil has been used.

The tendency in Europe has been, for the past five years, to discard all types of palliatives, so that only a small amount of what is known as light tar is employed, the practice being to construct bituminous surfaces which will be efficacious for at least a year. There is sometimes enough binding base to cement the particles; and such materials are preferable, as a number of applications result in an accumulation of binding material at the end of a season. They are fairly efficient, but should not be applied in too great an amount, as a soft, greasy surface will result. Heavy rains may either cause washing or an oily, disagreeable mud and pools of oily water. For reasons of economy the material is usually applied cold, using ordinary sprinkler carts or distributors, of either gravity or pressure type.

In order that this class of palliatives should be distributed economically and satisfactorily, pressure distributors should be used which are equipped with suitable hoods to protect pedestrians and property from the attendant fine spray, and which are capable of distributing the material in as small amounts as $\frac{1}{8}$ of a gallon per square yard. If this method of distribution was employed, few would be the complaints of ruinage of clothes and house furnishings, filthy streets and disagreeable odors.

It has been claimed in some quarters that by the use of light oils, macadam roads

could be preserved under high speed motor-car traffic. This fallacy has caused a large waste of public funds in many cases, since the macadam has not only begun to disintegrate within two to three weeks after the application of the oil, although the effectiveness of the application as a dust layer was apparent for six weeks, but the road surface was left wholly unprotected during the trying winter and spring months. If properly applied, light oils are effective for about six weeks, but to apply them after November first in the northern states is to assure muddy, greasy surfaces during a part of the winter.

Although there is a large variety of proprietary palliatives on the market, they will not require special consideration in this article, since the fundamental principles underlying the use of palliatives have been fully covered in the foregoing discussion.

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Tentative Locations for a National Highway System

There has been published by the National Highways Association a map of the United States showing suggested locations for a national highway system aggregating 50,000 miles. Copies may be obtained of Charles H. Davis, President *pro tem.*, at Washington, D. C.

The point of view of the Association in regard to a system of national highways is indicated by the following paragraphs in a bulletin accompanying the map:

"The National Highways Association believes that the beginning of a comprehensive good road system for the nation must be made by the Federal Government.

"It is universal experience that one mile of good road breeds another mile. Put a state-wide, good road down anywhere in this country, and in ten years there will be dozens of good roads reaching it from all parts of the state. Put down a system of national highways, built and maintained by the National Government, and the various state legislatures and county officials would soon see the advantages of connecting all parts of the states with those national roads.

"There are 2,000,000 miles of roads in the United States. The 50,000 miles of highway shown on the map is but a fraction over two per cent of this mileage. But improve these 50,000 miles into good roads, and keep them good roads by proper maintenance, and 50,000 miles more would grow almost over night, and then another 50,000 and another and another, until our great country, with its huge territory, would be crossed and recrossed with good roads, as France is to-day."



Illuminating engineers, commercial and civic organizations, manufacturers and others having valuable information on street lighting are invited to submit photographs and data for possible use in this department

Ornamental Street Lighting with Gas

By Alan Bright

AT the present time we are in the midst of a progressive period in which enterprising cities want to light up. Our modern "white ways," electric signs and other spectacular displays by means of various forms of illuminants cause the methods of lighting that prevailed only a few years ago to sink into insignificance. It seems as though the fact has suddenly dawned upon people that the most profitable

and direct way of creating public interest is to "illuminate." Since early times hunters have taken advantage of the fact that a lighted lantern or fire brand will attract game at night, and yet it is only within comparatively recent times that it has been realized that lighted areas may be used to attract people.

It is true that electric lighting has been the leader in the reformation of street



NIGHT VIEW IN SCHENLEY PARK, PITTSBURGH

Single-globe ornamental gas lamps



THE LIGHTING STANDARDS IN SCHENLEY PARK, PITTSBURGH, BY DAY

lighting, and perhaps most of the ornamental installations of considerable size have been electric installations. In several of the large cities, however, the full possibilities of gas ornamental street lighting have been fully demonstrated, and this form of street lighting is certain to become one of the most satisfactory and economical forms of municipal service.

The cost of operating electric light plants is prohibitive in thousands of cities of small size, and the chief forms of illuminant in such places are artificial or natural gas. In extensive districts of large cities it is also of advantage to use gas on account of its lower cost, but this lighting has generally been done in so inefficient a manner that those districts have been at a disadvantage as compared with districts more brilliantly lighted. But this need not be. Properly planned and equipped gas street lighting will give results satisfactory from every esthetic and practical point of view.

Equipment of Gas Units

The equipment usually seen on gas street lighting installations consists of an old-

fashioned burner, that has been in service for years, enclosed in an unsightly box-like affair mounted on a wooden or cast-iron post. It is not generally appreciated that these inefficient units may be replaced with burners that compare in artistic appearance with the best types of modern boulevard units and at the same maintenance cost. The substitution of up-to-date burners may even make a saving.

One of the main objections to gas lighting for city streets has been the lack of a convenient and satisfactory means for the remote control of lighting and extinguishing lamps. By means of the pilot ignition system with magnetically controlled supply valve, this difficulty has been overcome. The desirable features of remote control are obtained and the gas consumption of the pilot burners during the daytime is practically negligible. This system of gas control is practiced more abroad than it is here. In Germany such gas lighting systems are common. There are some places in which the use of pilot burners is done away with, the gas being ignited with an electric spark.

Another system of lighting and extinguishing ornamental gas street lamps, which is used to some extent in this country, is to equip each unit with a clock mechanism that automatically opens and closes the supply valve at the proper time.

Good mantle burners enclosed in properly diffusing ball globes and set on correctly designed standards accurately spaced are all that is required for ornamental street lighting. The units may be used singly or in groups, as circumstances make it desirable.

The Pittsburgh Installation

One of the notable installations of ornamental gas lamps made during the last year was in Schenley Park, in the Oakland district of Pittsburgh. This is the region in which are located the Carnegie Museum, Library and Music Hall, the Carnegie Institute of Technology, the University of Pittsburgh, the Soldiers Memorial Building and Forbes Field.

At the entrance to the Park and at the ends of the Junction Hollow and Panther Hollow Bridges, 5-light clusters are used, there being about twelve of these. One



LIGHTING STANDARD AS "CHANNEL MARKER"

All traffic must keep to the right of the red globe



LIGHTING STANDARDS NEAR THE FRANCIS SCOTT KEY MONUMENT, BALTIMORE

hundred single-light standards extend on both sides of the boulevard from Forbes Street and Panther Hollow. Single mantle burners enclosed in Alba ball globes are used throughout. The single-light burners are mounted at a height of 12 feet. The top light on the 5-light clusters is 16 feet from the ground. The average spacing between standards is 60 feet.

There is a point near the Carnegie Institute of Technology where three drive-ways meet. In the center is mounted a 5-light cluster, the top light of which is enclosed in a dark-red globe. This serves as a "channel marker," as all traffic must

keep to the right side of the red globe.

The illumination resulting from these units is not such as would be required on "white ways" in business sections. It was not attempted to light the park drives in such a way as to create the brilliant effect that is desirable on avenues lined with business houses. In the vicinity of parks and other places of recreation, the function of the lighting system is not to attract crowds but to provide adequate illumination with equipment of fairly high decorative or ornamental value. The matter of illumination is really secondary to decoration in such places.



The editors are glad to receive photographs and data for possible use in this department from municipal officials, water works superintendents, consulting engineers, manufacturers or others having interesting information on water supply subjects.

Increasing the Efficiency of Small Water Works and Sewage Treatment Plants*

Advantages to be Derived from Expert Supervision of Operation and Maintenance

By Paul Hansen

Engineer, Illinois State Water Survey

TO one who has had occasion to visit a large number of small water works and sewage treatment plants, the impression received most strongly is the unsystematic, inefficient and generally slipshod manner in which these utilities are operated. Many are of excellent design, but this is entirely negated through unintelligent management. The employment on an annual basis of consulting experts to supervise the operation of such plants is therefore urged.

The expert exercises the character of

*From a paper presented before the Illinois Society of Engineers and Surveyors, January, 1913.

supervision which is herein considered: (1) through instructions given to the locally employed men regarding their respective functions; (2) by visiting the works under his supervision at stated intervals, which may be semi-monthly, monthly, or perhaps quarterly, and (3) by the regular review and study of monthly operation reports prepared by the local employees in accordance with methods prescribed by the expert. These services will consume but a matter of a few days per month, and can, therefore, be secured for about \$600 per annum. It may be conservatively stated that when the increased effectiveness,

safety and economy which will result through such expert supervision are taken into consideration, the services rendered will be many times the value of the fee.

There should be no overlapping of function between the expert and the local engineer in general practice, for their respective fields are entirely different. On the contrary, there should be a hearty coöperation between them, for the expert generally finds it advantageous to work through and with the general practitioner, and the latter should be the first in the community to recognize when the services of an expert are needed.

The advantages to be derived from the expert supervision of water works and sewage treatment plants are of three kinds: First, the increase in the efficiency of operation; second, the improvement in detailed design as a result of the experience gained by the designer in connection with operation; and, third, the extension of the activities of consulting experts in a profitable and legitimate way.

Under the head of increased efficiency of operation a subdivision relating to water works may be made as follows: (1) Records and accounts; (2) source of supply; (3) purification works; (4) pumping station, and (5) distribution system.

Records and Accounts

The maintenance of good records and accounts lies perhaps at the very basis of securing efficient water works management, since it offers the means whereby the various items of that management may be analyzed from the economic view point. Once the situation has been analyzed or diagnosed, so to speak, the remedy is plain. The ordinary records that should be maintained in connection with water works operation comprise primarily:

1. Measurement of yield from source of supply.
2. Quantity of water pumped.
3. Head pumped against.
4. Quantity of coal used.
5. Amount of ash produced.
6. Water evaporated in boilers.
7. Location and size of mains.
8. Records regarding purification works, including analytical control.
9. Cut-off valves and hydrants.
10. Location and size of house connections, meters, etc.
11. Descriptive records of leaks and repairs and various other items that may be warranted by local conditions.

The common practice in this connection is to maintain imperfectly measured pumping records only, and often not even that.

In connection with water works accounting, figures should be so arranged that they will show the cost of the various water works activities and also indicate clearly such items as the following: Capital account or expenditures for original construction; maintenance and operation, including such items as fuel, salaries, repairs, replacements, supplies and incidentals; interest on outstanding bonds; expenditures for taxes; amounts paid as dividends; contributions to sinking fund; expenditure for insurance and damages; receipts from special tax levies and sale of stocks and bonds; net receipts from sale of water; net receipts from sale of meters; house connections and miscellaneous. With such records it is possible to make an intelligent analysis of the entire water works operation. This analysis when skillfully made will show clearly where economies may be effected and will constitute a substantial foundation upon which to base a schedule of just and reasonable water rates.

Simple and logical as all this may seem, it is a fact that the great majority of small water works can state merely the gross amounts received and the gross amounts paid out, and the water rates are copied, parrot-fashion, from neighboring towns. Capital accounts are not thought of, and it is rarely that the total net cost of construction during the life of the plant can be given. The profits are generally considered to be the excess of annual receipts over expenditures, and such trifling items as interest on bonds, payments for the retirement of bonds, depreciation, allowances for taxes, contribution to sinking funds, etc., are quite overlooked. There are instances in which a profit is proudly claimed in connection with the operation of municipal plants, whereas a proper analysis of the figures would show an actual loss. On the other side it may be pointed out that municipally owned water works rarely credit themselves with rental from fire hydrants and water furnished by so-called free services. Thus it often happens that a water works regards its revenues as too limited to effect necessary changes, whereas proper accounting would indicate the plant to be on a good financial basis.

Source of Supply

In the design of small water works the ultimate yield of the source of supply is often not taken into consideration with sufficient care. This defect would be remedied by a better knowledge of operating conditions, but even then it frequently happens that unexpectedly rapid growth and other unforeseen conditions result in the shortage of water. This would readily be foreseen by an expert, and extensions would be recommended in due time to avoid any serious result.

In another category belong supplies that originally were of good quality but which, owing to increased density of population and impossibility of protecting the watershed, have become dangerously polluted. There may also be conditions connected with the handling of a water supply which may render it subject to pollution, even though the source of supply be entirely undefiled. Such dangers as these will always be detected by an expert and it would not be necessary to follow present practice and wait for a disastrous epidemic to emphasize the danger before the remedy is applied.

Purification Works

Purification works are perhaps the most neglected part of a small water works installation. It seems in this connection almost impossible to secure effective operation without the supervision of an expert. It is becoming more and more the custom at the present time to place large installations in charge of technically trained men, but the small works are left to the tender care of the pump man or the fireman. In operating mechanical filtration plants, for example, the greatest temptation is to omit the use of the coagulant, especially when the raw water is moderately clear. Such practice often gives a water of acceptable appearance but which, when judged from the bacterial standpoint, is of poor quality. Moreover, chemical feeding devices are liable to become clogged and get out of order and hence require a certain amount of regular attention. There are innumerable other ways in which unintelligent management may cause a purification works of good design to give poor results.

Efficient operation of water purification cannot be accomplished unless there are maintained very complete operation records and unless there is maintained regular an-

alytical control. Further than this the records and analytical results require interpretation at the hands of one who has special familiarity with filter design and operation. The expert cannot as a general rule save money on the operation of purification works, but he can without doubt greatly increase the efficiency at minimum cost, and possibly save the community from the calamity of a water-born epidemic.

Pumping Station

In pumping stations for small water works, the machinery is not frequently enough overhauled and is neglected to such an extent that slippage is often excessively large—50 per cent is by no means unusual. The weighing of coal and ashes is a rare exception, and it is practically impossible to learn anything regarding the performance of the station. In a great many plants the equipment is inadequate, and this fact is not ascertained until some serious breakdown occurs. With expert supervision it is possible to effect great economies and great improvement in the service rendered in connection with pumping station operation, by introducing better care of the machinery and boilers and more intelligent attention to duties on the part of pumping station employees.

Distribution System

The distribution system in a neglected condition may prove exceedingly costly. Waste of water may come about through undetected leaks in the mains due to electrolysis or other causes, through unrestricted waste, through the existence of unrecorded service connections and through theft of water. Another result of unintelligent supervision over the distribution system is the incorrect extension of the mains. Often there are introduced unnecessary dead ends, and it is common to use pipe too small to permit of adequate fire protection.

Metering is now recognized as one of the greatest means of preventing waste. Furthermore, metering places the sale of water on a fair and equitable basis to the consumer. The waste that has resulted from unrestricted use of the water has in many instances caused a failure of the source of supply. It also necessitates increased capacity of the pumping machinery and the purification works.

Sewage Treatment Plants

The most discouraging experiences are encountered in connection with the operation of municipal sewage treatment plants. Of half a dozen small sewage treatment plants that the writer has visited in the state of Illinois, not a single one was producing acceptable results, primarily because of neglect. This condition is no doubt brought about by the fact that sewage purification plants are generally not popular with the community that pays for their installation and maintenance. They are forced upon a community by injured riparian owners in a downstream direction. If such works are built, it seems to be the general policy of a community to provide for their operation at the least possible expense. This in many instances results in total neglect until the community is again stimulated to action by threatened or actual damage suits. A neglected sewage treatment plant cannot be placed in shape in a day, and as a result it becomes necessary to expend large sums of money for overhauling and in part for reconstruction, which might have been avoided if the plant were under regular and intelligent management.

Poor supervision over small sewage treatment plants has led to a tendency on the part of state boards of health and other bureaus having supervision over the installation of such works to demand larger proportions for such works in anticipation of probable neglect and reluctance on the part of communities to increase the size with the growth of population. This, of

course, adds materially to the cost and might be avoided if there existed the general practice of maintaining sewage purification plants under the supervision of competent specialists.

Improvements in Design

It is well known that the advantage of a particular detail of design is not demonstrated until the opportunity is afforded for "seeing how it works out." The consulting engineer who designs and supervises the construction of plants usually ceases his connection therewith, just as he is coming to the point where he may see how his designs work out, and if he has any curiosity on this point he must make all subsequent visits and investigations at his own expense.

Referring specifically to sewage treatment plants, it may be said that there is a great lack of accurate knowledge regarding the behavior of small installations of this character, because of the almost universal tendency to neglect them, and this, in turn, reacts on our knowledge regarding proper design. As a matter of fact, a surprisingly large number of small sewage treatment plants are improperly designed and unsuited to the particular service which they must perform. There is a tendency among engineers to apply experience gained in the operation of large treatment plants (because this is the only experience available based upon careful operation) to the design of small works, and this almost always results in serious misfit.

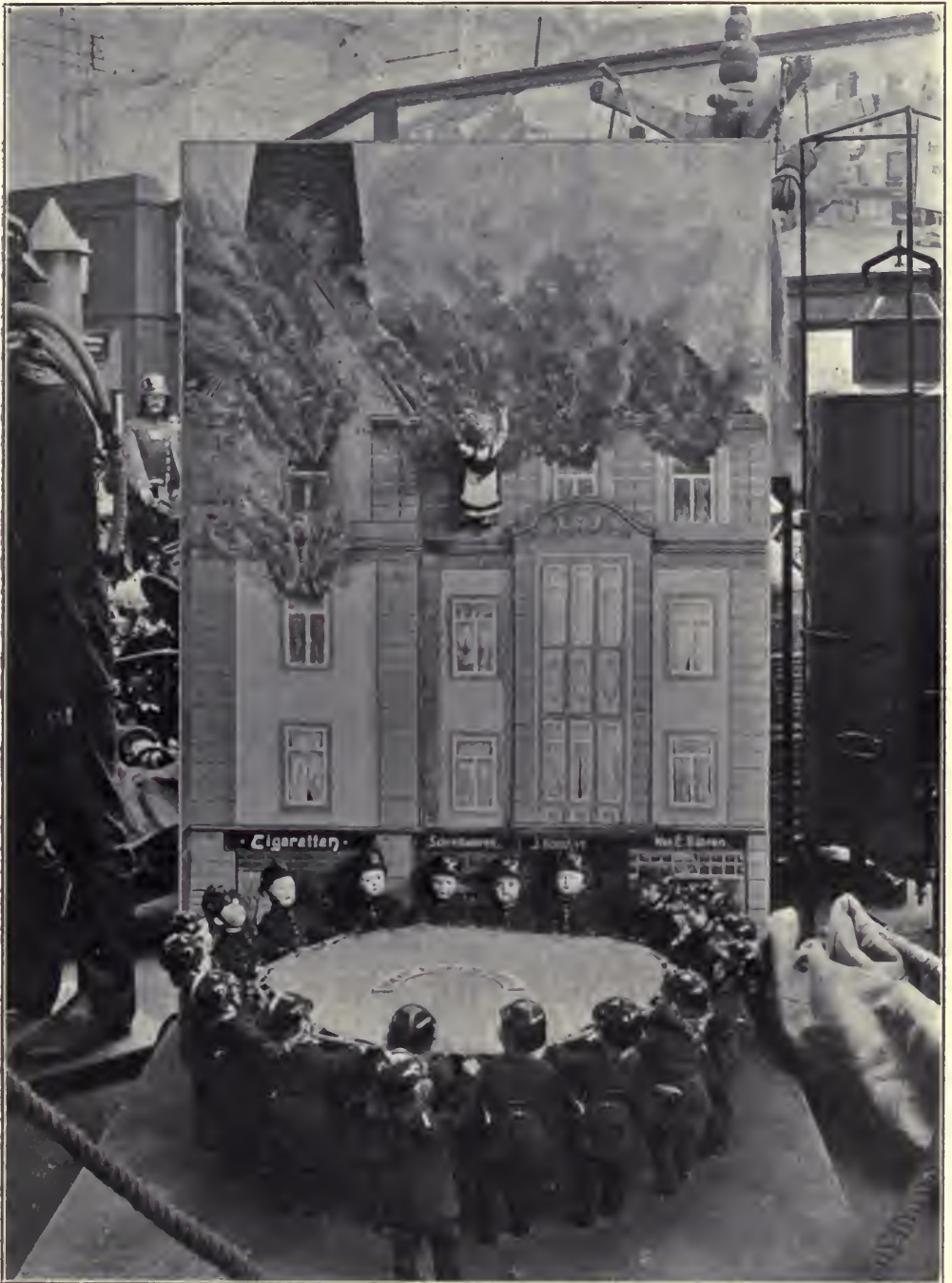
Summer Course in Municipal Sanitation at Harvard University

DURING the six weeks from June 30 to August 9, Harvard University will offer a group of courses relating to the general subject of municipal hygiene and sanitation. It is expected that these courses will prove of especial value to public health officers, students of municipal government and others wishing to obtain a practical demonstration of the principles of sanitation applied to actual problems.

There will be thirty-six lectures by Prof. George C. Whipple on Municipal Sanitation, covering various topics relating to water supply, sewerage, air, garbage, etc.; twelve

lectures on Vital Statistics by Professor Whipple and Mr. Sylvester Schattschneider, and twelve lectures on Sanitary Biology by Dr. John W. M. Bunker. There will also be a series of field excursions to various places of sanitary interest in the vicinity of Boston for purposes of practical work and a series of exercises in the sanitary engineering laboratory at Pierce Hall.

The tuition fee is but \$30, with an additional laboratory fee of \$10. A bulletin descriptive of the course may be obtained by addressing Prof. George C. Whipple, at Pierce Hall, Cambridge, Mass.



A GERMAN LESSON IN METHODS OF LIFE-SAVING BY CITY FIRE DEPARTMENTS

This interesting and instructive little group was part of the recent City Planning Exhibition in Düsseldorf, Germany

FIRE PROTECTION



The January Fire Loss

The records of the *New York Journal of Commerce* show that the fire losses for January, 1913, aggregated \$15,459,900 less than for January, 1912, in which month severe climatic conditions greatly increased the number of serious fires. There were 536 fires each causing a loss of at least \$10,000 in January of last year, while the total number of such fires in January, 1913, is 365—a more gratifying sequence of the three digits.

Monthly and Yearly Fire Losses

| MONTHLY LOSSES | | | | YEARLY LOSSES | |
|----------------|---------------|---------------|--------------|---------------|---------------|
| | 1911 | 1912 | 1913 | 1912.... | \$225,320,900 |
| January | \$21,922,450 | \$35,053,150 | \$20,193,250 | 1911..... | 234,337,250 |
| February ... | 16,415,000 | 28,601,650 | ..... | 1910..... | 234,470,600 |
| March | 31,569,800 | 16,650,850 | ..... | 1909..... | 203,649,200 |
| April | 17,670,550 | 16,349,400 | ..... | 1908..... | 238,562,250 |
| May | 21,422,000 | 21,013,950 | ..... | 1907..... | 215,671,250 |
| June | 20,691,950 | 16,103,450 | ..... | 1906..... | 459,710,000 |
| July | 25,301,150 | 15,219,100 | ..... | 1905..... | 175,193,800 |
| August | 12,662,650 | 14,158,800 | ..... | 1904..... | 252,554,050 |
| September .. | 11,333,250 | 13,779,300 | ..... | 1903..... | 156,195,700 |
| October | 13,945,000 | 13,651,650 | ..... | 1902..... | 149,260,850 |
| November .. | 18,680,600 | 16,172,300 | ..... | 1901..... | 164,347,450 |
| December ... | 22,722,850 | 17,967,000 | ..... | 1900..... | 163,362,250 |
| T'l for y'r. | \$234,337,250 | \$225,320,900 | ..... | 1899..... | 136,773,200 |
| | | | | 1898..... | 119,650,500 |

The First Municipal Fire Prevention Club in the United States

By E. Jay Wohlgemuth

Chairman Organization Committee

WHAT is believed to be the first non-partisan city fire prevention club in the United States was organized in Cincinnati on December 10, 1912. As the idea has already aroused considerable interest among the fire departments and municipal officials in other cities, the following outline of the plans and purposes of the club is presented for the benefit of THE AMERICAN CITY'S readers.

The new organization is based on the idea that fire protection and prevention are all one question fundamentally, and that architects and builders, the fire department and city administration, insurance men and manufacturers and dealers in fire preventive apparatus and material could all gain much by exchanging their views and discussing the general subject from the various standpoints. While the club may be

developed eventually into a body taking a more or less active part in the local problems of fire prevention, at first it is proposed to be only an educational and social medium. The meetings, usually noon-day luncheons, followed by discussions, will be held at the Business Men's Club once a month. The dues are nominal, \$2 per year.

The club has put itself on record as not wishing to interfere with or criticize the work of the city authorities or the fire department. It is simply an attempt to express the need long felt for organization and coöperation in a local way that has always been more or less lacking in fire prevention work. By bringing all the various interests into closer relations, each will learn from the other and the fire waste will be reduced.

How the Organization Was Formed

In many cities the need for organization in suppressing fire waste has been recognized, as indicated by the appointment of fire protection committees of the Boards of Trade or other business organizations.

With a few exceptions, however, the actual results accomplished have been rather fragmentary and meagre. As a rule the insurance interests have taken the greatest part in publicity and educational work. In organizing the Cincinnati club, a new departure and an important one was taken. In attempting to have all interests, including even the property owner, represented, invitations to join and to attend the initial meeting were sent to a list of several hundred names. These included the larger manufacturers and merchants; local architects and building interests; manufacturers and representatives in the city of the various fire protective and preventive devices, appliances and systems; fire and water departments, city officials and the captain of each engine and hose company; the local fire underwriters, civic organizations, and a considerable miscellaneous list. The call sent out was signed by a temporary organization committee consisting of representative men in the various branches of the work, including the chief of the local fire department.

Included in the membership thus secured were a fair sprinkling from the various classes of fire protectionists. Among those who joined were the mayor of the city, the public service director, a number of cap-

tains of fire companies, the secretary of the Bureau of Municipal Research, a professor from a local university, the superintendent of the water works and several of the larger manufacturing concerns. So far as the leading business houses and manufacturers of the city are concerned, it is planned to have them take out memberships and be represented rather by their factory superintendents, managers or others who have immediate charge of the fire protection of the establishment, or who handle the insurance business.

"In outlining some of the possibilities of the club, the statement of the organization committee said:

"If this club were to organize and, say, have a dozen committees, one for each monthly meeting in the year, providing speakers who are students of the various subjects, and these talks were followed by discussions, doubtless there would soon be a body of 100 or 200 men who could pass upon fire protection and prevention matters from the standpoint of the layman at least with a fair degree of intelligence. Some of the assignments of these committees might well be:

"Ordinances, laws and legislation.

"Insurance.

"Private or individual fire protection in factories and mercantile establishments.

"Fire protection devices, apparatus and appliances.

"Municipal fire protection.

"Publicity and education.

"Municipal and individual fire inspection.

"Work of fire marshals, salvage corps, etc.

"It is, perhaps, best that this club should work more or less independently and should not in any manner be influenced or controlled by any special interest. As it is to be an organization for education and investigation, it is hoped that in time affiliation may be had in some way with the Ohio State Fire Prevention Association and the National Fire Protection Association, so as to secure the benefit of their experience and knowledge."

Fire Protection Library

A suggestion which probably will be brought to early fruition is the establishment of a fire prevention and protection library, where members, at no expense to themselves beyond their membership fee, can have at hand the latest thought and developments in these vital fields. There is a not very extensive literature bearing on these subjects, and the books are widely scattered, relatively few even of the recognized experts having all the leading works available. One of the serious drawbacks to successful fire prevention and protection study by either the non-expert or the young

Proposal Notices

Any city, town or county which places a club subscription for **THE AMERICAN CITY** is entitled to the use of this department without charge for proposal advertisements not exceeding four inches single-column measure. Additional space at reasonable rates. If bids should be asked for at too early a date for insertion in the following issue, send copies of your notice to **THE AMERICAN CITY**, and we will distribute same without charge.

PAVING

Millville, N. J.

Sealed proposals for the construction of a vitrified brick pavement with concrete base will be received by the Common Council of the City of Millville, N. J., until 8 o'clock in the afternoon, March 21, 1913.

The city reserves the right to reject any and all bids.

Approximate Quantities

21,100 square yards of pavement to lay.

6,800 cubic yards of excavation.

6,800 lineal feet old curb to reset.

820 feet of 30-inch vitrified pipe sewer.

Samples of brick to be used in the work must be deposited with the City Engineer at or before the time of the opening of the bids. Specifications may be obtained from the City Engineer.

L. H. HOGATE, City Recorder.
NEWTON B. WADE, City Engineer.

MOTOR PUMPING ENGINE

Saskatoon, Sask., Can.

Sealed tenders, addressed to the City Commissioners, Saskatoon, Sask., and endorsed "Tender for Motor Pumping Engine," will be received up to 12 o'clock noon on Tuesday, the 15th day of April, 1913, for one Motor Pumping Engine of 500 gallons capacity, and one Motor Pumping Engine of 1,000 gallons capacity. Tenderers are required to quote on their own specifications.

All proposals must be accompanied by a certified check for 5 per cent of amount of tender as a guarantee of the good faith of the bidder. Checks of unsuccessful bidders will be returned within two weeks of awarding of contract. Prices must include delivery f.o.b. cars Saskatoon. The lowest or any tender not necessarily accepted.

F. B. HARRISON, Mayor,
Chairman of Commissioners.
Saskatoon, Sask., Feb. 17, 1913.

REINFORCED CONCRETE BRIDGE, BASCULE BRIDGE, AND PAVING

Norwalk, Conn.

Sealed proposals for the construction of the Washington Street Bridge for the Town of Norwalk, Conn., will be received at the office of the Secretary of the Bridge Construction Committee, in the Fairfield County Savings Bank Building, 51 Wall street, Norwalk, Conn., until 2 o'clock P. M., on the 20th day of March, 1913, at which time the bids will be publicly opened and read in the Town Court Room in the Town Hall, in said Norwalk.

The proposed bridge will be mainly of reinforced concrete construction, with a double-leaf bascule over the channel, have a width of 60 feet and a total length of about 965 feet, with brick paving on the roadway and cement sidewalks.

The work of construction will be divided into three sections, and separate bids are requested for each section.

Section I—The concrete work, with all foundations.

Section II—The bascule bridge superstructure.

Section III—All paving, etc.

Plans and complete data are on file in the office of the Secretary of the Bridge Construction Committee and in the office of J. E. Greiner, Consulting Engineer, Fidelity Building, Baltimore, Md.

A complete set of plans, specifications, instructions to bidders, etc., will be furnished by the Consulting Engineer upon the receipt of a deposit of \$10 for each set of each section, which amount will be returned upon the return of the sets in an undamaged condition.

A certified check for \$1,000 will be required with each bid as a guarantee of good faith.

The right is reserved to reject any and all bids.

DR. A. F. BEARD, Chairman.

THOMAS I. RAYMOND,

JOHN F. McMAHON,

SAMUEL LYNES,

JOHN J. HANLON,

ISAAC CHURCH,

WILLIAM MORAN.

Bridge Construction Committee
Washington Street Bridge, Norwalk, Conn.

WATER WORKS

NOTICE TO CONTRACTORS

Meriden, Conn.

Sealed proposals, addressed to the Board of Public Works, for constructing a system of waterworks for an additional water supply for the City of Meriden, Conn., will be received by William S. Clark, City Engineer, at his office in the City Hall, Meriden, until 12 o'clock noon, Tuesday, March 18, 1913.

Plans and specifications can be seen and blank forms for proposals can be obtained at said office or at the office of A. B. Hill, Consulting Engineer, No. 100 Crown street, New Haven, Conn.

The right is reserved of rejecting any or all bids if deemed for the best interests of the City of Meriden.

The work will be divided into four contracts as follows, bidders being allowed to make proposals either for a single contract or for two or more combined.

First: Concrete Dam and Culverts and Highway Grading.

This contract will comprise, in part, about 16,500 cubic yards of earth work; 1,200 cubic yards of rock excavation; 6,100 cubic yards of concrete; 3,000 square yards of rip-rap, and 8,500 barrels of Portland cement.

Bond on proposal, \$3,000; on contract, \$5,000.

Second: Distributing Reservoir.

This contract will comprise, in part, about 17,000 cubic yards of earth and 100 cubic yards of rock excavation; 5,000 cubic yards of concrete; 24,000 pounds of steel for reinforcement, and 7,000 barrels of Portland cement.

Bond on proposal, \$3,000; on contract, \$5,000.

Third: Cleaning Site of Storage Reservoir.

This contract will comprise about 160 acres of grubbing; 100,000 cubic yards of excavation and 1,000 square yards of rip-rap.

Bond on proposal, \$5,000; on contract, \$10,000.

Fourth: Pipe Laying.

This contract will comprise, in part, the laying of about 24,000 lineal feet of cast-iron pipe, 20 inches, 24 inches and 30 inches in diameter, and 2,000 cubic yards of rock excavation.

Bond on proposal, \$1,500; on contract, \$3,000.

(Signed) BOARD OF PUBLIC WORKS.
William S. Clark, Supt.

WATER WORKS SYSTEM

NOTICE TO CONTRACTORS

West Winfield, N. Y.

Sealed proposals will be received by the Board of Trustees of the Village of West Winfield, N. Y., up to 1 o'clock P. M. of the 1st day of April, 1913, for the construction of a municipal water-works system for that village.

Approximate Quantities

10-inch pipe.....4,176 feet

8-inch pipe.....1,356 feet

6-inch pipe.....9,108 feet

4-inch pipe.....6,348 feet

Pump house, concrete, standpipe foundation, concrete.

Plans, specifications, etc., can be procured of Dr. C. F. Wood, President of the Village, West Winfield, N. Y., or of W. G. Stone & Son, Engineers, Mann Building, Utica, N. Y. Specifications free. Plans, \$1.50 per set, not returnable.

A. C. HACKLEY, Village Clerk,
West Winfield, N. Y.
W. G. STONE & SON, Engineers,
Mann Building, Utica, N. Y.

SEWER SYSTEM

Sealed proposals will be received by the Village of Palatine Bridge, N. Y., for the construction of sewer system and sewage disposal plant until 10 A. M., March 22.

MORRELL VROOMAN,
Cons. Eng., Gloversville, N. Y.

IF THERE IS NEED

in your city or town for more active interest in municipal improvement work, why not get up a club of subscriptions for **THE AMERICAN CITY**, so that your public officials and officers or members of your board of Trade or Chamber of Commerce may be kept in touch with what other cities and towns are doing which is worth while.

student, however well grounded in fundamentals the latter may be, has been the inaccessibility of standard books.

It is intended that this condition shall be changed, at least in Cincinnati, and that all the latest information procurable in this form shall be at the disposal of the club members. With a complete library of this kind, in the hands of a competent librarian, there will be provided every facility for careful study of the subjects, study of which is the foundation of the organization.

A Similar Organization in Columbus

The need for such an organization as that above described was recognized in the formation of a similar club in Columbus, O., in January.

A strong fire prevention sentiment al-

ready existed in that city, having been fostered by the Credit Men's Association, the Young Men's Business Club and the Builders and Traders Exchange, as well as by a number of the manufacturers, merchants and others. The fact that the Ohio State Fire Prevention Association was organized in Columbus, and holds its quarterly meetings there, also has had a marked influence in strengthening fire prevention sentiment and encouraging fire prevention work in the capital of the state, so that there is every probability of the formation of a successful municipal club.

These organizations, in Cincinnati and Columbus, may well mark the beginning of a national movement of tremendous import and ultimate influence in the reduction of the huge fire cost.

Plans for the New York Convention of the International Association of Fire Engineers

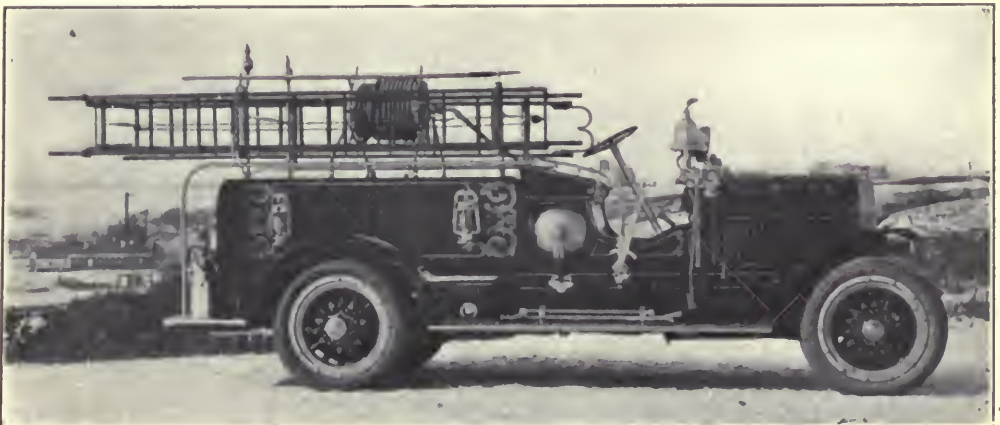
At a two days' session of the officers and directors of the International Association of Fire Engineers, held in New York last month, preliminary plans were made for the annual convention of the Association. This is to be held in New York for the six days beginning September 1, the exhibit and headquarters to be at Madison Square Garden. A charge of 20 cents per square foot will be made for exhibit space. Tests will be conducted from time to time during

the week at the repair shops of the New York Fire Department, at the foot of West Sixty-seventh Street.

The following topics and speakers were selected:

"Fire Insurance and Its Relations to Incendiarism," Commissioner Joseph Johnson and Chief John Kenlon, New York.

"Inspection of Buildings and Contents by Uniformed Members of Fire Departments," Chief H. C. Bunker, Cincinnati, Ohio, and Commissioner Cash, Cincinnati, Ohio.



WEBB COMBINATION CHEMICAL AND HOSE CAR, RECENTLY DELIVERED TO THE CITY OF GALENA, KANSAS

Equipped with pneumatic Fisk bolted-on tires

Dolarway Pavement

"It is permanent because it is concrete"

Three Fundamentals in Pavement Buying

1 First Cost: Dolarway Pavement consists of five or six inches of Portland Cement Concrete protected with a coat of Dolarway Bitumen and sand. It costs less than any other permanent pavement by over 50c. per square yard.

2 Cost of Maintenance: The maintenance of a Dolarway Pavement consists in an occasional renewal of the surface coating of Dolarway Bitumen and sand. The maximum cost of such renewals is 2c. per square yard per year. The saving in first cost is enough to provide a fund, the interest of which at 6% will maintain the pavement indefinitely.

A contractor can afford to offer Dolarway Pavement in place of any other pavement and offer the additional inducement of undertaking to keep the pavement in repair for

ten years free. He will be making money at that.

3 Appearance and Satisfaction: Dolarway Pavement, being of solid concrete, maintains perfect contour. The bitumen surface is waterproof, preventing damage by frost or weather, and protecting the concrete against fracture by traffic. The surface is clean and dustless. The bitumen acts as a cushion, preventing noise and making it an easy pavement for horses.

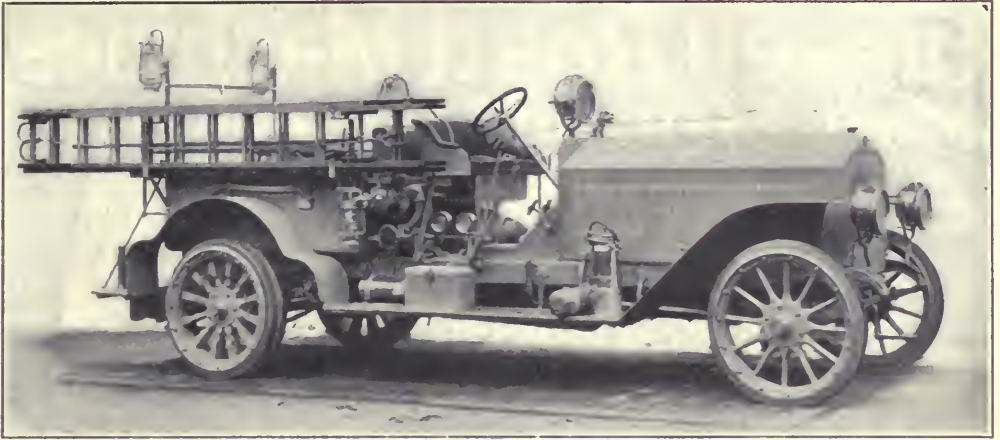
The discovery that a cheap thin coating of the right kind of bitumen is ample to protect concrete from traffic and weather is an invention of the utmost importance and is destined to cause a revolution in paving practice. The invention dates from 1908, when the first Dolarway Pavements were laid in Ann Arbor, Mich. Since then Ann Arbor has multiplied its mileage of Dolarway year by year and many other towns and cities are following suit. *Booklets on request.*

DOLARWAY PAVING COMPANY

Whitehall Building, New York



Dolarway Pavement, University Boulevard, Toledo, Ohio.



AMERICAN-LA FRANCE FIRE TRUCK, EQUIPPED WITH GOODRICH TIRES

"Fire Prevention and Uniform State Fire Marshal Laws," Thos. J. Ahearn, State Fire Marshal, Albany, N. Y., and C. A. Palmer, State Fire Marshal, Lansing, Mich.

"Motor Apparatus, Its Durability, Efficiency and Economy of Operation," Chief A. V. Bennett, Birmingham, Ala.

"The Gasoline Motor Pumping Engine, Its Defects and Cost of Operation and Maintenance," Chas. S. Demarest, Chief of Construction, New York.

It is also planned to have papers on "The Two Platoon" and "Fire Insurance

and Its Relations to Incendiarism," by speakers to be announced later.

Record Size Tires for the New York Fire Department

New York fire apparatus will shortly carry what is said to be the largest size of solid rubber tires made. Some weeks ago the City of New York placed an order with the Firestone Tire & Rubber Company, of Akron, Ohio, for a number of solid rubber tires, size 62 x 4. Delivery has already been made on part of the order.



FEDERAL COMBINATION FIRE HOSE AND CHEMICAL TRUCK IN PROVIDENCE, R. I.

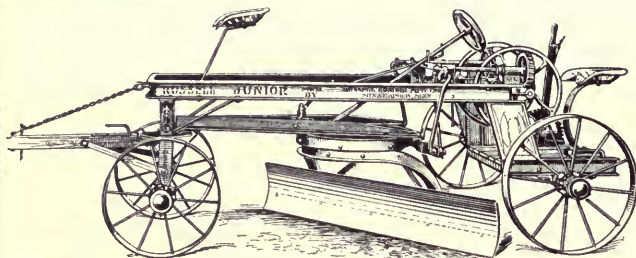
Equipped with Swinehart Cellular Tires

Russell Road Machines

Most Efficient Line On Earth

THE RUSSELL MACHINES are fully warranted, not only as to material and workmanship, but we also guarantee satisfaction to the user. Such a warranty backed by Russell reputation insures every machine.

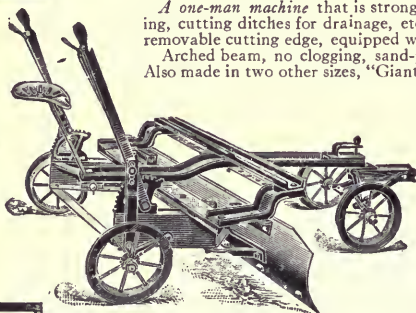
RUSSELL JUNIOR Reversible Road Machine



Most practical and efficient four-horse machine for general light road work. It has strength, durability and is just as complete in every detail of its construction as our larger machine, "Standard" or "Traction Special". Receding platform; one-piece axle both rear and front; patented rear axle shift. Blade, 6 ft. Steel wheels with removable boxes, sand-proof hubs and hard oil cups. Weight, 1500 lbs.

This type machine also made in two large sizes. Standard Russell Reversible for eight horses, weight 3,000 lbs., and the Traction Special, for engine power, weight 3,500 lbs.

SIMPLEX RUSSELL Reversible Road Machine



A one-man machine that is strong enough for four or six horses. Has no equal in grading roads, leveling, cutting ditches for drainage, etc. All steel, full-sized blade, 7 feet, 3 inches long, 16 inches wide, removable cutting edge, equipped with flanged wheels to avoid lifting, and has no side draft. Arched beam, no clogging, sand-proof hubs, powerful lever lifts, no neck weight, weight, 850 lbs. Also made in two other sizes, "Giant Simplex", 975, and the "Kid", 450. Free trial on request.

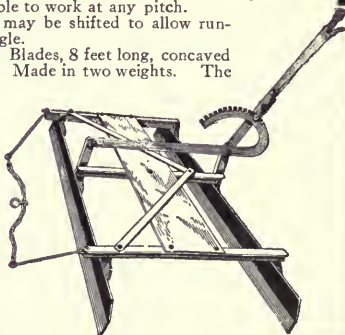
RUSSELL REVERSIBLE All Steel ROAD DRAGS

Combine strength, durability, efficiency and ease of operation. Blades are adjustable to work at any pitch. The "Grab Link" may be shifted to allow running drag at any angle. High Carbon Steel Blades, 8 feet long, concaved like a grader blade. Made in two weights. The

one shown here is our No. 4, which is an ideal drag for two horses, while the No. 5 is especially adapted to work with four horses, and other heavy service.

We make a full line of earth-handling and road-building machinery—Elevating Graders, Road Machines of all sizes and prices. Buck Scrapers, Wheel and Drag Scrapers, Road and Railroad Plows, Road Drags, Grader Disc Plows, Snow Plows, Corrugated Metal Culverts, Culvert Molds, Steel Bridges, etc.

Our 72 page book on road machinery, with many pointers on road building, ditch construction, grade or embankment work, wagon loading, cost table, installing bridges with concrete floors, concrete culverts, etc. sent FREE. Write for it today.



RUSSELL GRADER MFG. COMPANY

2238 University Ave., S. E., Minneapolis, Minn.

CITY PLANNING NEWS

What the City Plan Association of Albany is Accomplishing

By Horatio M. Pollock, Ph. D.

President of the Civic League of Albany

THE capital city of New York State is beginning the task of self-realization. Old residents say that within their memory there was never a time when citizens manifested so much interest in the growth and improvement of the city.

Concrete evidences of the city's revival are not lacking. A new \$800,000 high school, constructed according to the latest approved designs, fireproof and fully equipped to meet the demands of modern standards of secondary education, will throw open its doors in September next.

The city's water front, which too long betokened an indifferent citizenship, is to undergo a transformation. The old wooden docks are to be replaced by concrete ones, and private ownership is to give way to public ownership. On this work alone the city is to spend \$2,000,000.

A home building company, which was organized two years ago to provide better homes for the laboring classes, has already developed two large building plots and erected thereon nearly a hundred cottages. These homes are all detached and each is provided with lawn and garden.

A housing committee has also been organized to secure legislation that will compel house owners throughout the city to put their homes in sanitary condition.

Plans for an intercepting sewer with sewage disposal plant to cost upwards of \$1,000,000 have been prepared, and the work is soon to be undertaken. The whole business center of the city is to be repaved during the next two years. Electric energy is to be secured by the municipality at cost from the large Barge Canal dams built by the state several miles north of the city.

Anticipating the growth in population and industry that is bound to result from

the new civic enterprises, the citizens have recently subscribed \$200,000 for the erection of a modern industrial building.

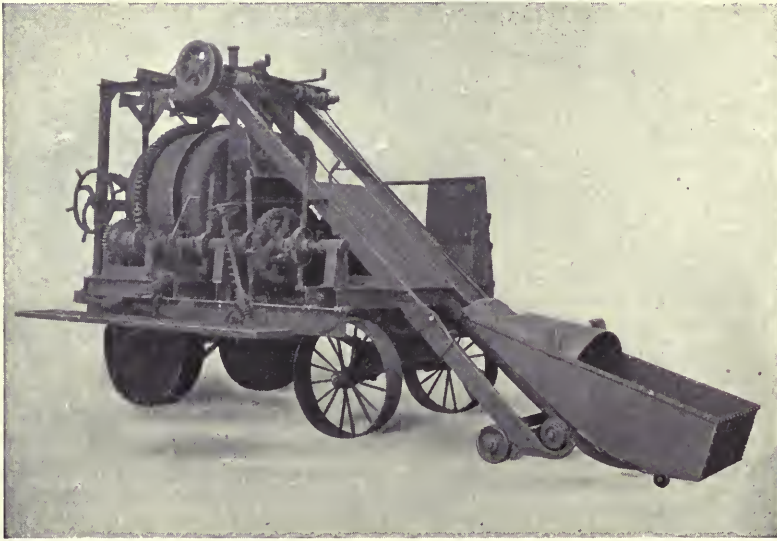
Albany's new outlook is the result of several causes. About four years ago Prof. Charles Zueblin came to this city and in a series of five masterly addresses, emphasized the need of city planning. After one of his lectures a group of citizens came together and appointed a city plan committee. Little was done, however, during the next year and the original committee gave up the work assigned them. A few active spirits in the Civic League who had been instrumental in bringing Zueblin to the city then took up the city plan idea. It was thought that the only way to get a city plan that would be approved by the citizens would be to establish a central association which would be a clearing-house for the ideas advanced by the Chamber of Commerce, the Civic League and the other civic bodies located in various sections of the city. To help matters along, Clinton Rogers Woodruff, Secretary of the National Municipal League, came to the city and gave an inspiring talk on "City Planning."

Shortly after this lecture a scheme was evolved whereby the City Plan Association was to include in its membership all the members of all the affiliating organizations, and its governing board was to be composed of two representatives of each such organization and ten directors-at-large to be elected by the representative members of the board. It was also provided that the Commissioner of Public Works and the City Engineer should represent the city on the board and that the two members to be appointed by the Governor should represent the state. On this basis a permanent organization was effected, although the city

ANNOUNCEMENT

Ransome Mixer Catalog---Just off the Press


It contains over 65 cuts of Ransome 1913 Mixers. You can see just what your outfit will look like. Many new designs are shown.



No. 61 RANSOME STREET MIXER, SHOWING OPERATING LEVERS AND PLATFORM. HOPPER IS READY FOR BATCH.

THE No. 61 Ransome Street Mixer will handle up to 20 cu. ft. of loose material and will mix from 40 to 60 batches per hour. It is regularly furnished with a 20-ft. distributing chute which can swing through a radius of 180°. The large wheels used permit of approximately 18-inch clearance between wheels, more than enough to cover the ordinary manholes, etc., without jacking up the machine. Excessive height has been afforded by eliminating the charging hopper, the over-all dimensions being kept within 11 ft. 2 ins. The driving wheels are 44 ins. in diameter with 10-inch tires, and 40-inch front wheels with 8-inch tires are used. Flanges bolted to the tires make it possible to operate the machine on trolley tracks, etc. One man can operate all levers. The outfit is driven by an exposed gasolene engine saving 2,000 lbs. in weight and really 3,000 to 4,000 lbs. when water, coal, etc., are considered.

We are ready to tell you more about these street mixers when you say the word.

Send This Coupon To-day 

RANSOME CONCRETE MACHINERY CO.
DUNELLEN, N. J.
Gentlemen:—Please send me a copy of
"Ransome 1913 Mixer Catalog."
Name.....
Address.....

and the state have not as yet been represented.

It having been voted at one of the first meetings of the board of directors that the new City Plan Association should hold a civic luncheon every Wednesday noon, President Jacob Y. Read set about the difficult task of securing sufficient coöperation to make the luncheons successful. The first year the attendance averaged about 50, but as the interest increased the attendance swelled until now the large dining room of the Ten Eyck is often completely filled. Since September last the attendance has averaged nearly 150, and on several occasions it has exceeded 200. The luncheon lasts about 35 minutes and the speech that follows about 25 minutes. A large variety of topics have been discussed, but all have related to the general topic of civic or social betterment.

As a direct result of the activities of the City Plan Association, a city planning ordi-

nance has been passed and Arnold W. Brummer has been engaged as expert to assist in planning the new improvements the city is undertaking. A new ordinance for the collection of garbage has recently been pushed through the Common Council by the Association. At the present writing the Association is backing with great enthusiasm the new conservation plan of the state. It is hoped that with the realization of this plan for cheap electricity a great industrial boom will come to Albany. The faith of the city planners was clearly indicated at a recent luncheon when in 30 minutes over \$50,000 in sums of \$2,000 and less was subscribed for the new industrial building.

Co-operation is the big word of the Albany Plan Association. People with diverse views by association are finding common ground for action and by acting together they are producing results hitherto deemed impossible.

Conventions and Exhibitions

A Conference for Municipal Home Rule

The adjourned annual meeting of The Municipal Government Association of New York State will be held on March 13, at 3 o'clock, at the Hotel Ten Eyck, Albany. The meeting will be followed, at 7 o'clock, by a home rule conference and dinner, under the joint auspices of The Municipal Government Association and the Legislative Committee of the State Conference of Mayors and Other City Officials. At the dinner, Governor Sulzer and others will speak, and the members of the State Legislature will be guests of the Association.

The adoption of strong home rule planks by all the principal parties in New York State has virtually eliminated the home rule question as a party issue. The Municipal Government Association and the Mayors' Conference have prepared a legislative program consisting of three separate measures. These include:

- A Home Rule Constitutional Amendment.
- A Municipal Empowering Act.
- An Optional City Incorporation Act.

There is a probability that at least a part of this program will be accepted by the legislative leaders and put on the statute books this year. This will be the first concrete achievement in the new campaign for home rule in the Empire State. There will be a general discussion of all these measures at the conference and dinner on the 13th.

+ +

New Officers of the American Road Builders' Association

At the annual business meeting of the American Road Builders' Association, held in New York on February 8, the following officers were elected:

President, Samuel Hill, Honorary Life President, Washington State Good Roads Association, Seattle, Wash.

First Vice-President, Harold Parker, Vice-President, Hassam Paving Co., Worcester, Mass.

Second Vice-President, W. A. McLean, Provincial Engineer of Highways of Ontario, Canada, Toronto, Ont.

Third Vice-President, Geo. W. Tillson, Con-



Studebaker

"Confidence" Cicero rightly said—
"Is that feeling by which the mind embarks in great
and honorable courses with a sure hope in itself."
Confidence is the basis of all satisfactory business transactions.

The Municipalities of this country have confidence in Studebaker and their products because the **Equipment bought on our representations have made good.**

We build Sprinklers, Sweepers, Pneumatic and Power Flushers, Distributors for road building and dust laying materials, Garbage Wagons and Carts, Bottom Dump Wagons and Boxes, Street Cleaners' Carts, Vehicles, Harness, Automobiles. Catalogs and complete details upon request.

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Kansas City, Mo.
Chicago, Ill.
Portland, Ore.
Minneapolis

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SOUTH BEND **INDIANA**

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Philadelphia
Denver, Dallas
Salt Lake City
Somerville, Mass.

ADV. NO. 1928

sulting Engineer of the Borough of Brooklyn, N. Y.

Secretary, E. L. Powers, Editor "Good Roads," New York.

Treasurer, Major W. W. Crosby, Consulting Engineer, Baltimore, Md.

Directors for three years: Nelson P. Lewis, Chief Engineer, Board of Estimate and Apportionment, New York, N. Y.; Wm. H. Connell, Chief, Bureau of Highways and Street Cleaning, Philadelphia, Pa.; R. A. Meeker, State Highway Engineer of New Jersey, Trenton, N. J.; Logan Waller Page, Director, United States Office of Public Roads, Washington, D. C.; Gen. T. Coleman du Pont, President, E. I. du Pont de Nemours Powder Co., Wilmington, Del., and C. A. Kenyon, President, Indiana Good Roads Association, Indianapolis, Ind.

J. M. F. de Pulligny, Chief Engineer of Roads and Bridges of France, was elected an honorary member. M. de Pulligny is the Director of the French Mission of Engineers to the United States and for some time has been stationed in this country studying American engineering practice. He has addressed several meetings of road builders in this country. He is the first man to be elected to honorary membership in the Association.

The selection of a place for the next convention was left with the Executive Committee, as were also the details of arranging for the exhibition.

+ +

Association of Pennsylvania Boroughs

The biennial meeting of the Association of Pennsylvania Boroughs was held in Harrisburg on February 4. The officers elected were:

President, T. F. Chrostwaite, Hanover; Secretary, Raymond Staub, New Oxford; Treasurer, Frank B. Wickersham, Steelton.

+ +

Federal Cooperation in Highway Construction

Formal approval of the policy of Federal cooperation with the states in highway construction and maintenance characterized the annual meeting of the Board of Directors of the American Highway Association held in Washington last month. The consensus of opinion was that there should be Federal cooperation in highway construction and that the best results could be obtained by improving those main highways which carry the greatest volume of tonnage

and serve the largest number of people, with an equitable distribution of such highway improvement among the states.

+ +

SOME COMING EVENTS

MARCH 11-12.—URBANA-CHAMPAIGN, ILL.

Illinois Water Supply Association. Annual Meeting. Secretary, Edward Bartow, Urbana-Champaign, Ill.

MARCH 13.—ALBANY, N. Y.

The Municipal Government Association of New York State. Annual Meeting. Executive Secretary, Walter T. Arndt, 38 Park Row, New York City.

MARCH 13-16.—NEW ORLEANS, LA.

Ninth Annual Conference of National Committee on Child Labor. General Secretary, Owen R. Lovejoy, 105 East Twenty-second Street, New York City.

MARCH 26-27.—NEW YORK CITY.

National Fire Protection Association. Annual Meeting. Secretary, Ralph Sweetland, 141 Milk Street, Boston, Mass.

MARCH 26-29.—NEWARK, N. J.

American Physical Education Association. Annual Meeting. Secretary, J. H. McCurdy, M. D., 93 Westford Avenue, Springfield, Mass.

APRIL 25-29.—ATLANTA, GA.

Southern Sociological Congress. General Secretary, J. E. McCulloch, Nashville, Tenn.

MAY 5-7.—CHICAGO, ILL.

National Conference on City Planning. Secretary, Flavel Shurtleff, 19 Congress Street, Boston, Mass.

MAY 6-10.—RICHMOND, VA.

Playground and Recreation Association of America. Annual Meeting. Secretary, H. S. Brancher, 1 Madison Avenue, New York City.

MAY 12-14.—FORT WORTH, TEX.

Southwestern Water Works Association. Secretary, E. L. Fulkerson, Waco, Tex.

MAY 13.—BALTIMORE, MD.

American Association for Promoting Hygiene and Public Baths. Permanent Secretary, William H. Hale, Ph. D., Municipal Building, Brooklyn, N. Y.

MAY 15-20.—BOSTON, MASS.

National Congress of Mothers. Secretary, Mrs. A. A. Birney, 806 Loan & Trust Building, Washington, D. C.

JUNE.—LONDON, ENGLAND.

International Roads Congress. Secretary, W. Rees Jeffreys, Queen Anne's Chambers, Broadway, Westminster, London, S. W., England.

A REAL ROLLER

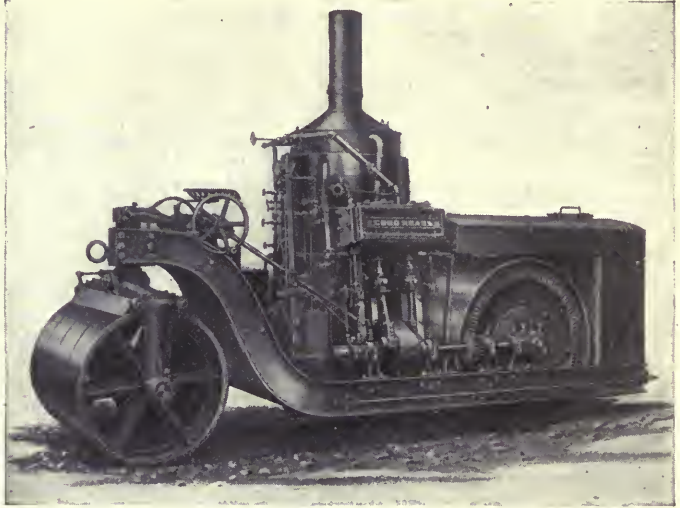
For towns and cities that want serviceable machines

The Monarch Tandem Roller

is better built, develops more power, is more easily operated and controlled, and will last longer than any other roller of this type.

This roller can be used in rolling park and cemetery drives, repairing brick and macadam streets, and in laying asphalt.

No town or city should be without a tandem roller. THE MONARCH is the roller.



The Monarch Tandem Roller.

HANDSOME CATALOGUE ON REQUEST

The Good Roads Machinery Co., Inc., Kennett Sq., Pa.



Road Oiling

AND

Street Sprinkling

¶ Let us figure with you before you make your contracts this year. There's a saving of money in it for your community.

¶ We have the experience, the apparatus and the determination to handle this work for you in a way which will enable us to hold your business year after year. Why not drop us a line to-day and let us know what you have in mind? Our suggestions will cost you nothing and may open your eyes to some possibilities you had not thought of.

American Car Sprinkler Co.
WORCESTER, MASS.
Specialists on Road Oiling and Street Sprinkling



Items of Civic and Municipal Progress

Denver Votes for Commission Government

At a special municipal election, held on February 14, four propositions were submitted to the people of Denver for their decision. The subjects submitted were: (1) amending the city charter to provide for non-partisan elections and the preferential system of voting; (2) amending the city charter so as to provide for commission government; (3) the holding of a charter convention; (4) a referred ordinance providing for reduced telephone rates, and adjusting rates charged in Denver for telephone service.

Proposition No. 3 was defeated, the voters preferring to adopt the commission charter submitted under proposition No. 2, rather than to authorize the holding of a charter convention. The other propositions were carried by substantial majorities.

A noteworthy feature of the new charter is that it will bring county as well as city departments under a single governing board. Five commissioners and an auditor will be the only elective officers; the mayor will be selected by the commissioners from their own number. The commissioner of property, in addition to his municipal duties, will be county clerk and recorder of deeds. The commissioner of finance will perform the duties of county treasurer and assessor. The commissioner of safety will be sheriff as well as head of the police department. The commissioner of improvements will supersede the county surveyor. And the commissioner of social welfare will perform the duties of county superintendent of schools and coroner.

The terms of the commissioners will expire in rotation, so that after 1915 not more than four city and county officers will be elected at any one time.

The new form of government will be inaugurated June 1, the five commissioners and the auditor to be chosen at an election on May 21.

The telephone ordinance will become effective immediately if not held up by litigation. It provides for a temporary schedule of telephone rates in Denver, gives the telephone company a hearing to ascertain the value of its plant for a fran-

chise and provides for permanent rates based on that valuation. An annual payment to the city of 2½ per cent of its gross income is demanded from the company and the company is ordered to apply for a franchise.

✦ ✦

Cleveland and Youngstown to Have New Charters

Under the home rule provisions of Ohio's new constitution, special charter elections were held in Cleveland and Youngstown on February 4. The result was a victory in both cities for the advocates of self-government for municipalities. The charter commissions elected in both cities are already at work, and it is expected that their reports will be ratified during the coming summer. In Cleveland it has been suggested that the election for the actual adoption of the charter now being prepared shall be held on July 18, the anniversary of Tom L. Johnson's birthday, or on July 22, the anniversary of the founding of the city.

✦ ✦

Tin Plate Ordinance in Portland

Portland, Ore., has passed the "tin plate ordinance." As reported in *The Survey* for February 8, the ordinance provides that on all hotels, rooming houses, lodging houses, tenement houses, apartment houses and saloons, the name of the owner of the building and his address shall be fastened near the main entrance so that it can easily be read. The measure is one of a number recommended by the local vice commission to solve the social evil. Those who do not comply with the ordinance will be subject to a fine of \$100 on conviction in the municipal court. The proprietors of hotels, rooming houses and tenement houses are preparing to contest the bonding ordinance passed on the recommendation of the Vice Commission. Proprietors of such buildings are required by the measure to file a surety bond of \$1,000 with the city as a guarantee that they will not permit immoral conditions to exist on their premises. The act provides that the bond shall be confiscated after a second conviction of a violation of its terms.



Combination Gasoline Road Roller Hauling Engine

The Up-To-Date Road Builder
20-30-45-70 Horsepower

WRITE FOR CATALOG

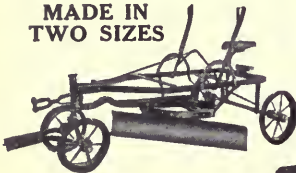
THE OHIO TRACTOR MFG. CO.
MARION, OHIO

THE GLIDE GRADER NO. 1 DITCHER NO. 3 LEVELER NO. 3

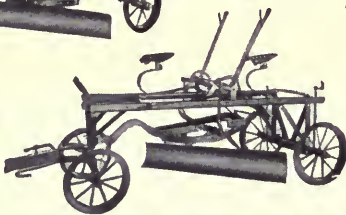
The Best All-Round Road Machine

MADE IN
TWO SIZES

NO. 1
Weight, 850 Pounds
2 Horses
1 Man



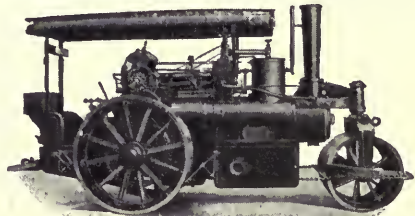
NO. 3
Weight, 1,100
Pounds
2 or 4 Horses
1 or 2 Men



Two strongly built, powerful, light weight Machines that fulfill every requirement for leveling, grading and ditching. Will dig a V-shaped ditch from 20 inches to 36 inches deep. Flanged wheels. Will not skid. Pivot axle. Frame 30 inches from the ground. Direct lever connection with blade permitting instant operation.

FREE Write us to-day for booklet and special good roads matter. **FREE**
GLIDE ROAD MACHINE CO.
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The ARISTOCRAT OF THE Road Roller World



STANDARD New York--Port Huron Rollers

cost a *little* more but they're *better*.

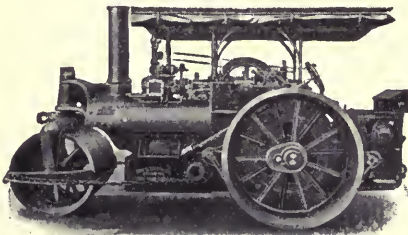
Designed by the most experienced mechanical talent in this country.

Built of the best materials money will buy. Above statements are true—provable facts. "The Port Huron Line"

is pictured and described in Booklet No. 9. Ask for it.

PORT HURON ROAD MACHINERY WORKS

(Of course it does)
PORT HURON, MICHIGAN



Buffalo Pitts Macadam Roller

Buffalo Pitts Road Rollers

Our Macadam Rollers have made a record for durability and efficiency that is unequaled.

Used exclusively by the leading municipalities and contractors. Built in all sizes up to 20 tons. Write for catalogue.

Buffalo Steam Roller Company

Boston

BUFFALO

New York

"A Penny a Week for Parks and Playgrounds"

Under this heading, Mayor George R. Lunn, of Schenectady, N. Y., has issued a circular urging the people of the city to support a bond issue of \$800,000 for parks and playgrounds. The circular contains reproductions of five plans prepared for Schenectady by John Nolen, of Cambridge, Mass. The importance of a properly planned city, with adequate recreation facilities, is effectively stated by Mayor Lunn. In speaking of the expense involved he says:

"There has been great outcry on the part of a few as to the expense. The cost of this improvement will be more than met by the increased property valuation of our city. Even if the entire cost, placed at \$800,000, were levied against the present population it would mean a penny a week per individual.

"Our only object is to make Schenectady a progressive city, to make it a place where people want to live, a place where people will come to live whether or not they work in the city's industries, because it will be a better place to live in than the places where such people now live; to make it a bigger, better Schenectady, better not only industrially and commercially, but better also in the moral, mental and physical welfare of its people.

"Give us more parks and less crime and drunkenness, more parks and less jails, more parks and better health, more parks and playgrounds that by legitimate recreation our children, as well as our grown-ups, may develop a happy, useful life in a city openly standing for human welfare as important above all things else."

+ +

Social Center Work in South Bend

The Chamber of Commerce of South Bend, Ind., through its Social Welfare Committee, has been active in promoting the use of the school buildings of that city as social centers. The work was first undertaken in a systematic manner in 1911 by the preparation of a pamphlet which might well serve as a model for similar campaigns in other cities. In this publication the need for social centers in South Bend was shown; the reasons why the school buildings should be made the people's forum were pointed out, and the possible advantages to the civic life of the community were emphasized.

This pamphlet has been used to excellent advantage for distribution throughout the neighborhood of a school in advance of any effort to establish social center work in that

particular building. In reply to an inquiry as to the results accomplished in South Bend, U. G. Manning, Secretary of the Chamber of Commerce, writes under date of January 28, 1913:

"The use of school buildings for public purposes of this kind was a new thing here, and the first year we secured an agreement with the school board to open up the buildings provided we would pay for janitor service. Later we induced them to dispense with that charge, and this year have induced them to go a step farther and make a small appropriation for promoting the work. We also induced them to put in a portable motiograph of the latest type, so that moving pictures and stereopticon entertainments could be given. We have a motion picture film exchange here which makes a specialty of educational films, and, therefore, whenever possible we endeavor to secure for the machine films that are closely related to the subject to be presented by the speaker.

"The social center work in some cities includes a wide variety of features, including using the building for recreation purposes. Here, however, we have merely attempted to organize the people of the neighborhoods into a sort of civic club, where they can get together, have music, singing, debates and addresses, with an occasional social evening at which refreshments are served. The work, therefore, is more educational than recreational, and now has, we think, so shown its value as to justify pushing it actively hereafter, which we intend to do.

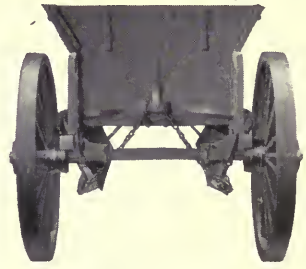
"We have the hearty coöperation of our present school authorities and also the coöperation of the teachers in the buildings where these clubs have been established, and feel that we have made a good beginning in a line of work that will prove of high value to the community. The ultimate ideal is to make our school buildings a sort of university for the people where they can go to secure enlightenment and inspiration on all of the matters that have a bearing on individual and community welfare."

+ +

An Effective Method of City Advertising

On February 11 the Board of Trade of Elizabeth, N. J., gave a luncheon which taxed the capacity of the spacious Elks' Club House of that city. The luncheon was tendered to the newspaper editors of the state of New Jersey and to representatives of the local commercial organizations throughout the state, as well as to a selected list of guests from New York, Philadelphia and other cities. Several able speeches followed the luncheon, after which the guests were given an opportunity to inspect an industrial exposition at which the city's slogan, "Made Right in Elizabeth," was given effective emphasis.

You Can't Get



the Watson dump wagon by asking for bids and giving the order to the lowest bidder. Never. The Watson is the highest priced dumping wagon. It always has been. And doubtless always will be. And yet the best cities all over America have specified Watsons. Why? For the same reason that 24,000 contractors and teamsters have bought it—because it lasts many years with small upkeep expense. Does this interest you? Let us send you the list of cities using Watsons for ashes, garbage and refuse.

WATSON WAGON COMPANY, Canastota, N. Y.

The World's Largest Builders of Dump Wagons

256 Broadway, New York, N. Y.
1192 Farmers Bank Bldg., Pittsburgh, Pa.

BRANCH OFFICES:

1391 Main St., Buffalo, N. Y.
604 Witherspoon Bldg., Philadelphia, Pa.

TIFFIN

MOTOR TRUCKS

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DUMPING WAGONS

MUNICIPAL VEHICLES

and FARM WAGONS

Are not excelled in Modern Devices, Enduring Quality or Splendid
Construction by any made in this or any other country.

THE TIFFIN WAGON CO., Tiffin, Ohio

Financial Statistics of the 184 American Cities of Over 30,000 Inhabitants

A PRELIMINARY statement of a special report on financial statistics of cities of over 30,000 inhabitants in the United States in 1910 was issued on February 15, 1913, by Director Durand, of the Bureau of Census, Department of Commerce and Labor. The statistics were prepared under the direction of Le Grand Powers, chief statistician for Finance and Municipal Statistics.

This report is one of a series of annual reports such as have been issued by the Bureau of the Census, the first one of which presented statistics of cities for the fiscal year 1902. Besides the general tables, it contains an introduction setting forth the scope of the inquiry, defining the various financial and accounting terms employed, and explaining the significance of the data presented. Data are presented for 184 cities of continental United States. These cities comprise all that were given a population of over 30,000 by the Census of 1910.

The report presents in considerable detail the receipts, payments, assessed valuation, rates and levies, indebtedness and values of public properties and public improvements.

The increasing governmental costs of cities and a corresponding increase in revenue receipts are shown in this report by a comparative summary of the revenue receipts and governmental cost payments for 145 cities for the years 1902 to 1910.

During those years the revenue receipts of the 145 cities increased from \$419,819,091 to \$717,882,232, an increase of 66.6 per cent, and the payments for permanent public properties and improvements increased from \$128,083,343 to \$266,244,078, an increase of 107.9 per cent. These increases were greater than the corresponding increase in the population, as is evidenced by the increase in the per capita revenue receipts from \$20.12 to \$27.24, a gain of 35.4 per cent.

The per capita payments for expenses and interest increased from \$16.37 to \$20.53, an increase of 25.4 per cent, and the per capita payments for permanent properties and improvements increased from \$6.13 to \$10.21, an increase of 66.6 per cent.

Revenue Receipts

The revenue receipts of the 184 cities included in the report amounted to \$759,942,445, and were from sources and in amounts as follows:

| | |
|---|---------------|
| Property, business and poll taxes.. | \$474,530,683 |
| Licenses and permits..... | 50,348,936 |
| Special assessments | 66,395,107 |
| Departmental fees, charges, rents and sales | 15,200,254 |
| Fines and forfeits..... | 3,726,687 |
| Escheats | 96,623 |
| Subventions and grants..... | 29,078,983 |
| Gifts, donations and pension contributions | 4,340,591 |
| Interest | 24,122,329 |
| Rents and privileges | 8,904,880 |
| Public service enterprises..... | 83,197,472 |

Of the total revenue receipts of the 184 cities, the 18 cities having a population of over 300,000 each received \$504,987,016, or 66.5 per cent, and the city of New York alone received \$197,779,833, or 26.0 per cent.

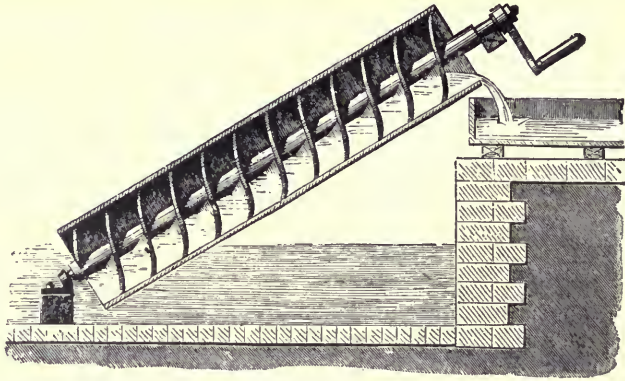
The per capita revenue receipts for the 184 cities amounted to \$27.82. For the cities of over 300,000 inhabitants they were \$33.24, while for the cities of from 30,000 to 50,000 inhabitants they were \$18.63. The larger part of such receipts was from property, business and poll taxes, the per capita being: For all cities, \$17.37, and for the two groups of cities above mentioned, \$21.54 and \$11.58, respectively.

Governmental Cost Payments

The governmental cost payments of the 184 cities amounted to \$855,599,192, of which \$449,219,789 was for expenses other than of public service enterprises, \$92,847,248 for interest and \$279,145,899 for outlays. The governmental cost payments of the 184 cities exceeded their revenue receipts by \$95,656,747, though their revenue receipts exceeded their payments for expenses and interest by \$183,489,152; from which it appears that, with slight modification for changes in cash balances at the beginning and close of the year, of the costs of permanent properties acquired and constructed during the year, 65.7 per cent was paid from revenues and 34.3 per cent directly or indirectly from non-revenue receipts.

The First Pump

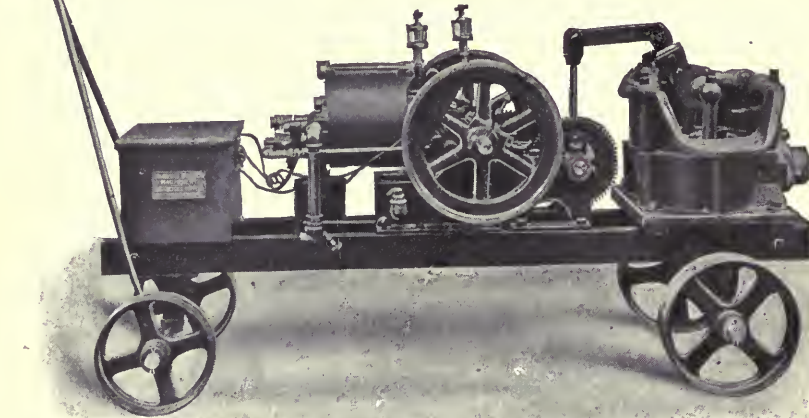
ARCHIMEDES,
the Learned Greek,
Probably Invented
the First Pump Used
for Practical Pur-
poses.



It was constructed about 250 B. C. in the form of aspiral screw, and was used for raising the water of the Nile to irrigate the adjoining lands. Little by little pumps have been improved for over 2,000 years, until today you will find the highest efficiency in the

Atlantic Diaphragm Pumping Engine

the pumping outfit that is used by progressive engineers and contractors for pumping out sewers, trenches, excavations, pier foundations, etc. It has for years proved its superiority as a worker and as a time and money saver.



List Price, \$150.00. Code Word "Atlaspump."

Innumerable testimonials prove conclusively that the Atlantic is overwhelmingly the best gasoline-driven pumping outfit on the market. Ask us for evidence and illustrated circular. It will cost you but a postal card.

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Andrews Concrete Tamper, Safety
Trench Braces, Felton's Sewer and Con-
duit Rods, Pearl Brand Suction Hose, etc.**

**78 W Beach Street
NEW YORK**

The gross payments for expenses other than of public service enterprises amounted for the 184 cities to \$449,219,789, distributed as follows:

| | |
|--|--------------|
| General government | \$53,402,487 |
| Protection to person and property. | 111,932,648 |
| Health conservation and sanitation | 44,339,456 |
| Highways | 54,778,717 |
| Charities, hospitals and corrections | 29,621,797 |
| Education | 133,533,813 |
| Recreation | 16,108,808 |
| Miscellaneous | 5,511,063 |

The gross payments for expenses of public service enterprises amounted to \$34,386,256, of which \$25,606,229, or 74.5 per cent, represents the expenses of systems of water supply operated by these cities. Such systems were operated by 138 of the 184 cities.

The per capita governmental cost payments for the 184 cities were \$31.32, of which \$17.71 was for expenses, \$3.40 for interest, and \$10.22 for outlays. The total for the group of 18 of the larger cities was \$37.15, while that for the group of 75 of the smaller cities was \$19.66.

Municipal Indebtedness

The report presents with considerable detail the most important facts relating to municipal indebtedness, assets and public properties of 184 cities. The facts thus presented show that the gross receipts from the issue and sale of city debt obligations during the year 1910 amounted to \$558,982,298, and the gross payments during that period for the redemption and purchase of city debt obligations amounted to \$401,183,243; the excess of receipts, \$157,799,055, being the resultant of the debt transactions of 136 cities which increased, and those of 48 cities which decreased, their indebtedness. Of the 18 cities of over 300,000 inhabitants, 17 increased, and 1, or 5.5 per cent, decreased their debt during the year. The percentages for the cities from 100,000 to 300,000, 50,000 to 100,000 and 30,000 to 50,000 that decreased their indebtedness were 22.0, 20.4 and 37.3 respectively.

The gross debt of the 184 cities at the close of the fiscal year 1910 was \$2,438,908,747, of which \$2,302,577,335 represents the debt of the city corporations; \$57,422,243 that of the independent school districts, and \$78,909,169 that of other divisions of the government of the city. City funds with investments held debt obligations of their own cities to the amount of \$433,866,-

697, or 17.8 per cent of the total indebtedness of all the cities included in the report. The sinking fund assets held at the close of 1910 for the amortization of debt amounted to \$461,591,650, having been increased during the year by \$33,882,133. The funded debt and special assessment loans amounted to \$2,279,284,838. The report classifies this amount by purpose of issue and by year of maturity. The funded debt, special assessment loans and revenue loans amounted to \$2,399,932,026, which amount is classified by rate of interest.

Municipal Assets and Public Properties

The assets and public properties of the 184 cities had a reported value of \$3,919,232,043. These values were reported under the following heads: General city cash, \$190,567,893; assets of sinking funds, \$461,591,650; assets of public trust funds for municipal uses, \$72,731,134; assets of investment funds and miscellaneous investments, \$70,873,283; assets of public trust funds of non-municipal uses and of private trust funds, \$12,061,043, and value of public properties, \$3,111,407,040. Of the last-named amount, \$1,144,007,040, or 36.8 per cent, represents the value of the land, buildings and equipment of public service enterprises, and the remainder includes the value of the property of departments, of municipal service enterprises and of real and other property held as investments.

Assessed Valuation

The reported assessed valuation of property assessed for taxation for the 184 cities was \$26,059,387,438, of which \$24,606,106,441 was subject to general property taxes, and \$1,453,280,997 was subject to special property taxes. Of the total valuation, \$17,491,117,653, or 67.2 per cent, was in the 18 cities having a population of over 300,000, and of this amount nearly one-half was in New York city. The report shows the tax rate on the assessed valuations and also the rates that would be required if property were assessed at its full value; also the levies for general property, special property and poll taxes, and the per capita for the total assessed valuations and general and special property taxes.

School Expenses

The total payments for school expenses of the 184 cities aggregated \$126,609,098, or \$4.64 per capita of population. This



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is profitable—it is one of the best municipal investments.

It increases trade; increases property values; and advertises a city without additional expense.

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give the best results in ornamental street lighting.

Alba gives maximum diffusion with minimum absorption—neither glare nor heavy shadows—most agreeable, least wasteful.

Alba is handsome in daytime as well as at night, and is easy to clean.

We have data valuable to any commercial or civic organization, or city government, interested in the best street illumination. The services of our Illuminating Engineering Department are freely at the disposal of such bodies for information, plans, etc.

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amount comprised payments for general administration, \$5,245,234; for instruction, \$98,410,197; for operation and maintenance of school plant, \$20,558,944, and for miscellaneous purposes, \$2,394,723. Each of these items is reported under a number of subheads.

The average payments, per pupil in regular attendance, for the expenses of elementary day schools, secondary day schools, normal schools and night schools, were \$38.50; these expenses being, \$1.59 for general administration; \$30.14 for instruction, and \$6.78 for all other objects. The expenses, per pupil in regular attendance, were greatest in the normal schools and lowest in the night schools, being \$173.33 per pupil in the normal schools, \$75.72 in secondary day schools, \$33.98 in elementary day schools and \$15.65 in night schools. The low average in night schools is caused in large part by the fact that these schools are always conducted in school buildings used for day schools, and all costs of operating the school buildings and maintaining them are charged to the day schools.

The average payments for expenses, per pupil, in elementary day schools were \$28.24 in the cities having a population of over 30,000 and less than 50,000; \$30.60 in cities

having a population of over 50,000 and less than 100,000; \$29.43 in cities having a population of over 100,000 and less than 300,000; and \$36.89 for the cities having a population of over 300,000. This average varied greatly as between the individual cities, being greatest in Sacramento, Cal., where it was \$46.17, and lowest in Portsmouth, Va., and Knoxville, Tenn., where it was \$13.10 and \$13.47, respectively. Of other cities with a very high average expense per pupil for the maintenance of the elementary day schools, mention is made of New York, N. Y., where it was \$41.47, Pittsburgh, Pa., where it was \$40.17, and Cincinnati, Ohio, where it was \$40.69.

Payments for school outlays amounted to \$33,482,833, of which \$31,270,696 was for buildings and land, and \$2,212,137 was for equipment. The payments for school outlays are further classified by kind of school and show the following totals: For general administration, \$171,675; for elementary schools, \$23,653,428; for secondary schools, \$8,798,494, and for all other schools and educational activities, \$859,236. Other payments reported for schools were for interest, for reduction of debt, for sinking funds and small amounts for other purposes.

An Exhibit on Lower Rents

On February 17 there was opened in Union Square, New York City, an "Exhibit on Lower Rents," arranged by the New York Congestion Committee. The primary object of the exhibit was to show the need for the enactment of a taxation reform bill recently introduced in the New York State Legislature by Senator Henry Salant and Assemblyman Michael Schaap. This bill provides for a reduction of the tax rate on all buildings in New York City to one-half the rate of taxation on all land, by a series of five equal reductions in five consecutive years, provided it be approved by a referendum vote in the city of New York.

Around the walls of the exhibit room were many placards and diagrams portraying the need for lower rents in New York and the reasons why a reduction in the tax rate on buildings would cause rents to drop. Arguments for the justice of the Salant-Schaap bill were also given.

Perhaps the most striking exhibit was a three-room apartment, such as would rent in different sections of the city for from \$10 to \$16 per month, which had been darkened to show the condition permitted by the present tenement house law in rooms that are technically light. This apartment was equipped with new furniture, cooking utensils, stove, chinaware, etc., for \$90; showing the average annual rental to be about twice the total cost of necessary furnishing. Another exhibit which attracted much attention was a huge kettle around which stood five figures pouring their rent in to help make the total of \$450,000,000, which represents New York City's annual rental.

A pamphlet entitled "Lower Rents and How to Get Them," was distributed to visitors to the exhibition. One of the cartoons in this pamphlet shows a workingman's family visiting the suburbs to get a lot for a home, and met by signs reading, "Held for High Prices." Another shows



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Well lighted streets pay—business is increased, new industries are attracted, the city is advertised as progressive, real estate values rise, public spirit and civic pride is strengthened and the city is made safer at night.

THE ORNAMENTAL

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In addition to the 6.6 ampere WHITE WAY type, two new types, the RESIDENTIAL and the PARKWAY for 4 ampere operation are now ready. With these three different types of ornamental Luminous Arc Lamps all parts of city can be scientifically and beautifully illuminated.

GENERAL ELECTRIC COMPANY

Largest Arc Lamp Manufacturer in the World

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Land Speculation on a joy ride in a leaping automobile, throwing the victims into a net called "Charity." Under the heading, "Fines New York City Imposes on Buildings," the pamphlet says:

"A tax on buildings is a fine on buildings.

"It is stupid and wrong to punish people for doing a useful and necessary thing, and we all know that we need buildings. The following table shows some of the fines we now put on the construction of buildings:

"For replacing an old dark-room tenement, assessed for \$5,000, by a healthy tenement assessed for \$30,000. Fine, \$457.

"For constructing a factory assessed for \$50,000. Fine, \$915.

"For building a home assessed for \$3,000. Fine, \$54.90.

"Buildings constantly depreciate; from the minute they are finished they get less valuable, because they are wearing out. Land values on the other hand are constantly increasing, because the city's population is growing and the demand for the use of land becoming greater. Buildings represent savings and earned income, but an investment which is constantly getting less valuable. Land, particularly in New York City, represents a value which the owner has not created, but which is maintained and constantly increased by the work of the people of the entire city.

"Buildings have to be repaired and insured against fire.

"Land NEVER wears out and can't burn up—it grows better instead of worse."

Municipal and Civic Publications

Copies may be ordered of THE AMERICAN CITY, which will furnish further information about these publications either by special letter or through its "Selected List of Municipal and Civic Publications," sent upon request.

ALLEN, J. GORDON, A. R. I. B. A., M. S. E.

The Cheap Cottage and Small House. A Manual of Economical Building. (Preface by Lord Henry Bentinck, M. P.) 1912. xii + 166 pp. Many illustrations. 50 cents

AMERICAN CIVIC ASSOCIATION.

National Parks. (Addresses by President Taft, Ambassador Bryce, Hon. Walter L. Fisher and J. Horace McFarland.) 1912. 32 pp.

AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS.

Transactions of the Society from Its Inception in 1899 to the End of 1908. 1912. Quarto. 127 pp. Illustrated. \$2.00

AMERICAN SOCIETY OF MUNICIPAL IMPROVEMENTS.

Standard Specifications for Brick, Sheet Asphalt and Wood Block Pavements. (Adopted by the Society at its Annual Conventions of 1911 and 1912.) 1912. 31 pp. Diagram.

AMERICAN WATER WORKS ASSOCIATION.

Proceedings of the Thirty-second Annual Convention of the American Water Works Association. Held at Louisville, Ky., June 3-7, 1912. xvi + 471 pp. \$5.00

"Buildings constantly depreciate; from the Bureau of Social Research of New England.

Report on Housing Conditions in Springfield, Mass. 1912. 39 pp. Illustrated.

BEARD, CHARLES A., and
SHULTZ, B. E.

Documents on the State-Wide Initiative, Referendum and Recall. 1912. viii + 394 pp. \$2.12

BAILEY, L. H.

The Pruning Book. 1912. ix + 545 pp. Illustrated. \$1.66

BLACK, MRS. ELMER, Member of the Advisory Board of the New York Terminal Market Commission.

A Terminal Market System—New York's Most Urgent Need—Some Observations, Comments and Comparisons of European Markets. 1912. 32 pp. Illustrated.

BLAKESLEE, ALBERT FRANCIS, Ph. D., Professor of Botany and Director of Summer School, Connecticut Agricultural College, and

JARVIS, CHESTER DEACON, Ph. D., Horticulturist, Storrs Experiment Station.

Trees in Winter: Their Study, Planting, Care and Identification. 1913. 446 pp. Many illustrations. \$2.22

BOURNVILLE, ENGLAND.

The Bournville Village Trust. 1911. 28 pp.

Typical Plans of the Bournville Village Trust. 1911. Quarto. 63 pp. Many views and diagrams. 25 cents

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in your plan to give your town an up-to-date lighting system, and will let you use their trolley poles to secure a "white way."

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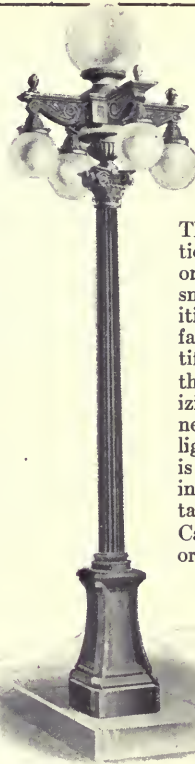
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You save the cost of additional lamp standards and underground construction, and avoid further obstruction of the curb line.

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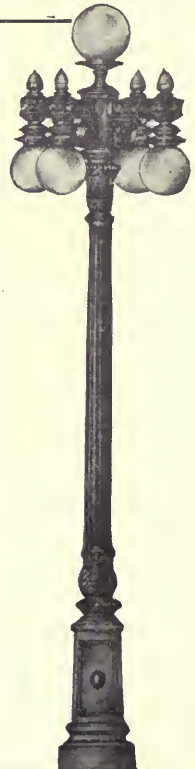
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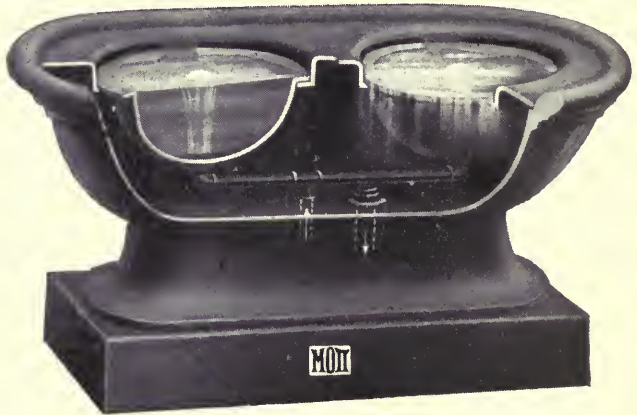
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Conducted by Edward Ewing Pratt, Ph. D.

Street Regulations in Berlin

The notably well regulated city of Berlin introduced on January 1, 1913, some additional police regulations, which, if adequately enforced, will tend to make the residents of that city the best behaved city dwellers in the world. Four of these may be cited as interesting examples:

1. More than three persons are forbidden to walk abreast in the street. Foot passengers carrying canes or umbrellas must not point the ends in the air or gesticulate with them, as such actions are dangerous to other foot passengers.

2. Doors and windows of houses, apartments, cafés or restaurants in which music is being played, must without exception remain closed.

3. Loud whistling, singing, shouting, talking, or the production of any disturbing noise on the streets is prohibited.

4. Wagons loaded with clanging metals must regulate their speed in such a manner as to do away with all nerve-racking noise, and automobile horns using the motifs of the Tetralogy are reserved exclusively for the use of imperial conveyances.

+ +

Revision of the Building By-Laws

The English Local Government Board has very recently called the attention of local authorities to the pressing need for a revision of the building by-laws. Though the Town Planning Act has made provision for revised by-laws in connection with any town planning scheme, yet the inadequacy of the general building laws has had a deterring effect on the application of the revised by-laws of this Act. It has been found that in places where town planning schemes are being started it is very difficult to get the local authorities to agree to the drastic revisions of the Town Planning Act, because these revisions will not be in force in the rest of their district. There is a greater need, however, for the revision of the laws in the fact that an increasing amount of building is being done every year and a great many unnecessary restrictions should be relaxed in order to make easier the building of cheaper houses. Where climatic and physical conditions are the

same, the laws should be uniform, whereas now they vary greatly, some places requiring a minimum of nine feet six inches in the height of a room, others only eight feet, and so on. A practical plan under consideration is the appointment of a central authority to redraft all existing building by-laws and vary them according to urban or rural conditions. This central authority would also establish a department where experiments with all sorts of cheaper building materials could be carried on and new methods practically demonstrated.

+ +

New Street Lighting for London

Within the next six months a new system of street lighting is to be installed in London. The reform is especially satisfactory to taxpayers, as the scheme provides for an increased illuminating power of over 600,000 candles at a reduced rate of \$27,000 per annum, as compared with the present expenditure on the same streets.

The obstructing lamp posts on the narrow sidewalks are to be done away with, and the scheme will be carried out on the centrally-hung principle. Gas and electricity will be used in equal proportions.

+ +

Combined Ownership of Plants in Germany

While formerly German public opinion was very much in favor of municipal ownership, there has been a change in recent years. The number of privately owned plants is increasing, but the most significant development is the evolution of the plant owned jointly by private and municipal interests. The first plant of this kind was the Rhenish-Westphalian Electricity Works, in Essen. Since 1902 this plant has enlarged very rapidly; and when it undertook to acquire all the street railways being operated in the industrial districts of the neighborhood, the cities and counties concerned decided to acquire some stock in the works. This was done by three cities and eleven counties, each one having a repre-

MOW YOUR LAWN QUICKER, CHEAPER, BETTER.

Here, at last, is the very machine that home owners, park superintendents, greens committees and others interested in big lawns or parks have been looking for. Never again is it necessary to have the lawn tracked up by horses pulling a lawn mower—nor need the beauty of your place be marred because the man-power mowers can cut so little in a day. With the

Brodesser Auto-Mower

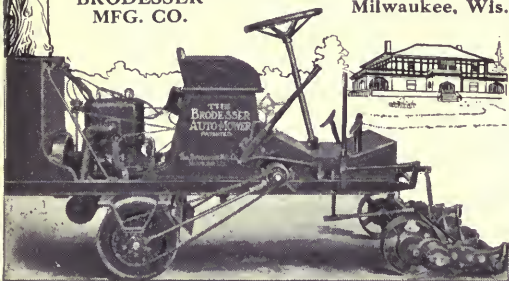
the whole lawn can be mowed quicker, cheaper and better than you ever thought of. Cuts the grass and rolls the lawn in one operation. Easiest running, cleanest cutting power mower ever invented. Weighs only about 1200 lbs. and does not kill the grass. Simply and substantially made. Steers by means of front wheels. Three-point suspension gives flexibility. Is not expensive and will pay for itself by the great saving of labor.

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Municipal Officials are invited to write for particulars of a complete protective method of issue.

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**A High Power Gasoline
Street Light**

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It gives a strong, powerful, white light. It is simple, durable and economical. All night service, 5c. per night.

Nothing to wear out or rust out. Made of cast iron, brass, copper and glass. Absolutely storm-proof.

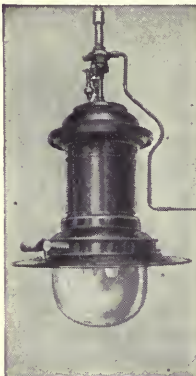
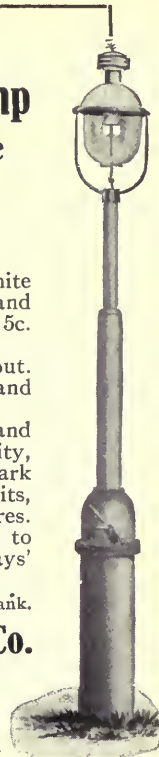
Street lights draw trade and population. They pay the big city, they will pay you. No more dark streets, broken limbs, damage suits, unsightly poles or dangerous wires.

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THOMPSON'S

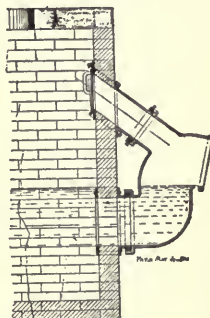
Cast iron catch basin trap and emergency outlet (combined) is one real

Practical Invention

Can be attached to brick, Stone and Concrete catch basins. By adopting this invention ripping up pavement and digging pits to remove obstructions from sewer connections is eliminated. This should interest City Engineers and others.

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sentative on the Board of Directors. There are several other companies working on the same basis. In some the city is the majority stockholder, in others the majority of stock is held by private interests. The cities and counties are chiefly interested in having a representative on the Board of Directors and the management and executive offices are left to the private owners. There is a good chance of these jointly owned plants becoming the most popular type in the future.

+ +

The Town Planning Competition for Dusseldorf

Düsseldorf recently held a town planning competition second only in importance to the one held in Australia. Although the town authorities already possessed a plan for the extension of the city, they felt they still might profit by suggestions and ideas from the outside and by holding a competition secure a consensus of skilled opinion at a comparatively small cost to the city.

There were five prizes offered. Though the competition was open to all, it was not strange that in the planning of a typical German city the awards should have all gone to Germans. Prof. Ing. Bruno Schmitz, of Charlottenberg, and Prof. Ing. Blum, of Hanover, were the winners of the first prize. They fulfilled very carefully the requirements of the competition, and their plan showed a most careful study of the city's needs, particularly in regard to park provision and the extension of the city into outlying districts. As an achievement it is said to touch the highwater mark of town planning in Germany.

In addition to the five winning designs the city purchased four others which, in the opinion of the jury, contained valuable suggestive material.

+ +

New Boulevards for Paris

The Paris Municipal Council has purchased from the National Government the fortifications of Paris and at a cost of \$40,000,000 will turn them into a series of parks and drives completely surrounding the city.

In addition to this, the council has decided to complete the famous Boulevard Haussmann, so named after the engineer of Napoleon III, and prolong it to connect

with the intersection of the Boulevards des Italiens and Montmartre. The cost of the work so long delayed will now be enormous, owing to the great rise in property values, and may exceed \$10,000,000.

The decision to complete the boulevard is due not only to esthetic considerations; the present traffic congestion renders the provision of new main thoroughfares essential, and the scheme will do something to relieve traffic in such very crowded arteries as the Boulevard des Capucins, and the Rue Auber, while the Place de l'Opera will not be so intolerably crowded as it is at present.

The original plan, as drawn up by Baron Haussmann over half a century ago, will be carried out with practically no deviations.

+ +

Light From Sewage

Germany has satisfactorily demonstrated that it is possible to light towns by sewage gas at a profit. The municipality of Bruenn, after many years of experiment, has perfected machinery which dries the sewage and afterwards distills it in retorts, in the same way as gas is distilled. In $2\frac{1}{2}$ hours' distillation 100 kilogrammes of sewage mud yield 23.8 cubic kilometers of gas of virtually the same composition as coal gas. In addition are obtained good coke and three times as much ammonia as is given by an equal weight of coal. The profit is so great that it is said to cover the whole cost of running the municipal sewage purification works, in addition to solving the problem of disposing of sewage in an absolutely hygienic way.

+ +

Municipal Fish Markets in Berlin

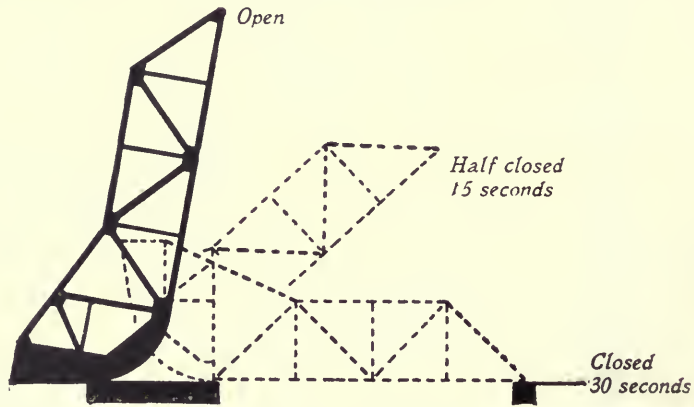
In its efforts to reduce the high cost of living, the municipal administration of Berlin has, for over a year, conducted the sale of fish in public market halls. The experiment has proved a decided success. There are at present seven municipal fish stands in the city proper, and several of the municipalities which make up Greater Berlin have established fish markets.

Fish are generally sold twice a week at the stands. The official prices are posted on the day previous to the sale in the municipal advertising columns displayed in many parts of the city.

The fish are purchased in wholesale quantities at Geestemunde and other important

Scherzer ROLLING Lift Bridges cost less than other movable bridges because they are the *Extreme of Simplicity*.

Deep water-ways carry raw materials inland. Factories increase, population and land values go up. Railroads must distribute the finished materials away from the deep water-ways. Every one is benefited because business is stimulated.



Scherzer ROLLING Lift Bridges are used **all over the world** because they use the only principle for moving a bridge that anyone would consider for moving any kind of land traffic. They ROLL (or rock) a short distance on **part** of a wheel, just as all land traffic rolls all distances on **whole** wheels.

But Scherzer ROLLING Lift Bridges have a great advantage over other ROLLING stock. They do not use friction-causing axles, trunnions and journals to support the bridge. Using only part of a wheel, they do away with this constant trouble and expense.



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Scherzer ROLLING Lift Bridges ROLL upward and back *away* from the water, leaving the channel entirely clear in thirty seconds, also forming a signal and barrier against accidents. Or they roll forward and down, *closing* the channel in thirty seconds. Traffic has practically no interruption because Scherzer ROLLING Lift Bridges do not *start* to open until a vessel is almost upon them and they *close* before it is more than a few feet away.

Scherzer ROLLING Lift Bridges combine economy, simplicity, efficiency. They adapt to movable bridges the greatest mechanical principle—the ROLLING principle.

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coast fish markets. They are sold at cost plus a tax of \$1.20 to \$1.43 per 220 pounds to cover the cost of transportation, etc. This makes the prices at which fish are sold at the municipal stands 1.7 to 1.9 cents cheaper per pound than those sold by private dealers. It has been found, however, that in certain of the large Berlin department stores which have fish departments there is very little difference in the price of fish handled by the city and those handled by the retailers.

The actual purchase and sale of the fish at the city market halls are carried on by the Municipal Market Hall Committee, to which is entrusted the general administration of the public market halls of Berlin.



Vocational Guidance Scheme in England

The London County Council has adopted a plan, originally introduced by the Municipal Reform Society, whereby children about to leave school are advised as to the most suitable avenues of employment. The main object of this scheme is to prevent children from rushing into the blind-alley occupations, and the need of the measure is indisputable. In London alone there are 200,000 children between the ages of 13 and 17, and about 60 per cent of these are taking positions in which they learn nothing and for which they become unsuitable in a few years.

Vocational advice is given through the means of local juvenile advisory committees, and not only the child but the child's parents are consulted. A suitable position is usually secured for him through a labor exchange, and the committee continues to give him advice and assistance until he reaches the age of 17. Every child is particularly urged to follow technical courses at a night school along the lines of the work he has chosen.

There are now 669 schools which are referring children to these committees, and in some districts where committees have not yet been formed the children's care committees are dealing with the question until proper arrangements can be made.

The London County Council has been able to report most favorably on the success of the movement throughout the country.

A New English Invention

With a view to minimizing the dangers of street traffic and putting a check on drivers of motor vehicles guilty of exceeding the speed limit, Mr. Thomas Farrow, of London, has invented an ingenious instrument which he calls the Faro-meter. The invention is very simple. It is placed on the front of the car and bears the inscription 10, 12, or 20 miles per hour, as the case may be. The figure can be altered in one way only—by the motorist exceeding the proper speed. The moment he does so the figure changes; and should the speed exceed the prescribed limit, a gong is automatically rung and continues ringing until the speed is checked, or, if it still increases, the figures give way to a red or danger sign.



An English Mayor's Innovation

The Mayor of Derby is an enthusiastic educationalist. In order to become acquainted with school conditions in his borough, he made a tour of all the elementary schools and conducted his visits with a good deal of formality. In doing this he hoped not only to awaken public interest in the schools but to arouse civic interest in the children by giving them a short talk on the town's history and its charters. This shows astonishing enterprise for so busy a man and a mayor.



Toronto Wants Taxation Reform

By a vote of some 25,000 to 6,000, the people of Toronto voted on January 1 in favor of instructing the legislature of Ontario to enact a measure allowing improvements to be taxed at a lower rate than land values. The great popular interest that was taken in the matter is evident from the fact that city officials were elected at the same time and the total vote on the head of the ticket was about 37,000.

The vote is only advisory, since Toronto does not yet have home rule in taxation. But it shows the trend of public sentiment and indicates that Eastern Canada is profiting by the example of the progressive provinces of the west.



The Telescope of Speech

The astronomer, by the power of his telescope, becomes a reporter of the movements of a hundred worlds greater than ours, and the student of celestial activities millions of miles away.

He points his instrument at any spot in the heavens, and his sight goes rushing through space to discover and inspect a star hitherto unknown.

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As the telescope may be focused upon any star, so the telephone may

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Your voice may be directed anywhere in the Bell System, and it will be carried across country at lightning speed, to be recognized and answered.

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NEWS *from the* MANUFACTURERS

METHODS
MATERIALS &
APPLIANCES

The Adaptability of Concrete for Paving Between Street Car Tracks

By L. F. Mead

THE widespread and growing use of plain concrete and "Dolarway"* as paving materials for small towns has led to many discussions as to their adaptability between and adjoining car tracks. But the adaptability of any pavement between street car tracks is always open to discussion. The reason for this is evident. From the pavement standpoint, the more monolithic the character of the pavement the longer the period of pavement service; but from the transportation company's point of view, the pavement between the tracks must be that which permits the most efficient operation of cars. The choice of a pavement construction for use between rails must, therefore, be such as to satisfy both the officials of the street railway company and those of the municipality.

The general practice is that the street car companies are obliged to pay for the construction and maintenance of the pavement within the railroad area. This area usually consists of that part of the street between lines 1 or 2 feet outside of the outer rails. This fact has led to the construction of those types of paving between car tracks that best enable the railway companies to make nec-

essary repairs to the rails without great consideration of the wearing qualities of the pavement.

A variety of methods are employed for paving along street railway tracks. Often the street pavement is carried to the outside of the rails. In wood block, granite block or brick pavement, this is the general custom, and the same construction is placed between the rails. With sheet asphalt pavement, however, the general practice is to place lining stone along both sides of the rails, and the area between the rails is composed either of asphalt as used on the rest of the street or of stones similar to the rail linings.

In the construction of pavements on streets where surface lines are operated, generally ballast of stone or slag is laid to a depth of 6 inches; ties 6 inches thick are laid in place, then the rails are placed and a 4- to 6-inch layer of concrete is placed around the ties and the bottom 2 or 3 inches of the rails. A sand cushion is then placed on the concrete, and on this the wearing surface of brick or block.

The use of concrete pavements between the rails is generally objected to by street railway officials. From the pavement standpoint, however, the monolithic character of concrete renders it especially adaptable; and unless there is a necessity for tearing up the pavement often to make rail repairs, it forms an excellent type of pavement construction for use in connection with street railway tracks. Usually, too, the repairs to tracks consist of work at

* This somewhat newer form of concrete pavement consists of a 5- or 6-inch base of concrete with a thin wearing surface of bitumen and sand. This method was invented in 1908 by Mr. E. W. Groves, City Engineer of Ann Arbor, Mich. Its widespread adoption during the last four or five years is due both to the durability of the pavement and its cheapness of construction. The method consists of applying a thin sheet of pure bitumen on the concrete surface, after which a layer of coarse sand or screenings is applied, which provides an elastic water-bound carpet upon the concrete base. This wearing surface adds to the life of the concrete and prevents cracking and chipping of the concrete surface.—THE AUTHOR.



Herewith are shown two men who find a motorcycle indispensable in their public work. On the right is Carl Green, Physical Director of the Y. M. C. A. of Dayton, O., and on the left is Elmer H. Gress, Supervisor of Public Playgrounds for the City of Dayton. It is a significant fact that after trying nearly every make of motorcycle these public servants finally chose and will continue to ride

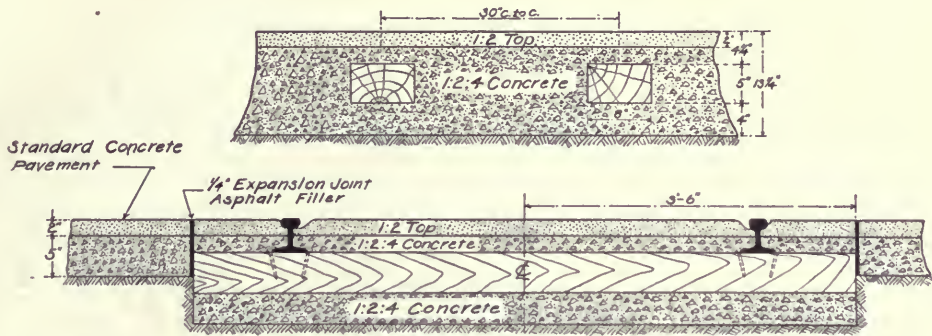
THE FLYING MERKEL

There is an excellent reason for the popularity of the Flying Merkel Motorcycle in municipal work. The long-stroke full-ball-bearing motor makes the most flexible power plant ever produced for a motorcycle. For 13 years the Flying Merkel has been popularly known as the "everlasting motor." The exclusive spring frame makes it the world's most comfortable motorcycle.

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NOTE: Top to be 1 part Portland Cement and 2 parts of clean, screened sand
Concrete base to be 1 part Portland Cement, 2 parts clean, sharp sand and 4
parts of crushed rock which shall not be smaller than a hazel nut nor
larger than what will pass a 1 1/2\" ring. A strictly wet mixture will be required.

METHOD OF LAYING CONCRETE PAVEMENTS BETWEEN CAR TRACKS, AS ADVOCATED BY
L. P. WILSON, CITY ENGINEER, MASON CITY, IOWA

rail-joints, and without seriously injuring the monolithic character of the pavement these repairs may be made by the use of small concrete sections at these points which may readily be moved and put back into place. Unless some such practice as this is followed, the difficulty of removing the concrete makes the track repair job a difficult problem for the street railway companies.

In many of the smaller towns concrete is placed between the rails, just as it is placed on the remainder of the pavement. In Mason City, Iowa, the construction is identical and the expansion joints in the concrete pavement extend from curb to curb.

In De Pere, Wisconsin, longitudinal expansion joints paralleling the tracks are placed in the pavement on the outside of the rails, and the concrete between the rails



LAYING CONCRETE PAVING IN MASON CITY, IOWA

"Firestone"

Continuous Base Notched Tread TRUCK TIRES

Increase
Truck
Profits

FOR rear wheel equipment on heavy service trucks, increase profits by preventing losses.

Reduce Tire Expense. Traction wave cannot form, tread separation cannot occur. Tough, resilient Firestone rubber means the greatest mileage.

Reduce Truck Repairs. Continuous base, working in unison with resilient tread absorbs all jolt and vibration — prevents mishap to mechanism.

In addition there is prevention of skid or side-slip, increase of traction, reduction of gasoline expense. Now that the price of gasoline is being advanced, this is an economy worth while.

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Branches and Service Stations In All
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DOLARWAY PAVED STREET IN GLOVERSVILLE, N. Y.

is cut up in sections by transverse joints which do not meet with the joints of the pavement outside of the rail.

In Bozeman, Montana, lining stones are used between the concrete and the rails, and this is the practice generally followed.

The actual costs of cutting through concrete pavements are frequently less than the cost of cutting through brick or other types. Mr. J. S. McCullough, City Engineer of Fond du Lac, Wisconsin, states the following in a paper on Reinforced Concrete Pavements:

"As to the statement that it is difficult to cut through concrete in case of the necessity arising to make repairs, I wish to refer to work done in Fond Du Lac, in constructing the conduits for the Wisconsin Telephone Company. The trench, 1 foot to 20 inches wide, was cut through 4,300 lineal feet of concrete pavement. The concrete was broken out in slabs the width of the trench by drilling holes 10 to 12 inches apart on lines of the trench and breaking out the slabs with wedges and feathers.

"A small steam drill, such as is used in stone quarries, drilled about 400 feet a day, and two men were able to break out the slabs. When the installation was complete the new concrete was put in place, and up to the present time we have not found any places that show any defect.

"The record cost of 4,600 lineal feet of concrete pavement for this work, according to a statement by the Superintendent of Construction of the Wisconsin Telephone Company was: Breaking out concrete per square yard,

\$0.246; total cost of both tearing out and replacing, \$1.828 per square yard.

"A board of publication at Fond Du Lac has given the Gas Company, Street Railway Company, and Water Company permission to make several cuts in the cement pavement, and we have encountered no trouble in getting the pavements replaced in apparently good shape. Of course, all such patches are noticeable if you look for them, but the ordinary pedestrian never sees them."

It is the belief of many street railway officials that with the present methods of track construction rails will last nearly as long as the pavements, which makes tearing up unnecessary.

† †

Hendricks' Commercial Register

The twenty-first annual revised edition of Hendricks' Commercial Register of the United States for Buyers and Sellers has recently been issued, and contains 1,574 pages and over 50,000 classifications, each representing the manufacturers of or dealers in some machine, tool, specialty or material required in the architectural, engineering, mechanical, electrical, railroad, mining or kindred industries. These classifications are so arranged that they can be used both for purchasing and mailing purposes. The book contains much information following the names of thousands of firms that is of great assistance to the buyer, and saves the expense of writing to a number of firms for any particular article. The book will be sent by the publishers, or by THE AMERICAN CITY, to any part of the country on receipt of \$10.00.

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The heavy metal used in the construction of our Garbage Cans makes corrugations unnecessary, therefore producing a sanitary can by eliminating the dirt catching features.

Heavy Ash Can
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LIST OF BOOKS ON MUNICIPAL AND CIVIC SUBJECTS FURNISHED
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A Department for the Illustration and Description of Machinery such as is
Used by Contractors or Municipalities in connection with Grading,
Road Building, Paving, Laying of Water and Sewer Pipe, Etc.

The Electric Shovel in a Crowded City

Boston is a notable example of a city offering unfavorable conditions for new building work. Not only are many of the streets narrow and winding, with buildings close together, but contractors must be very careful not to use any outfits which will infringe Boston's rigorous smoke law. The use of the electric shovel on such important excavation work as the City Hall on Court Street and the Merchants' Bank building on Exchange Street, indicates how contractors are meeting the situation.

On the City Hall work a Thew Type No. O electric shovel was used. The area measured about 225 by 60 feet, and is surrounded by buildings, one of them being Young's Hotel, thus making any noise or smoke particularly objectionable. It has been necessary to excavate on the average to a depth of 20 feet. The soil was fairly loose at the top, but near the bottom clay and rocks were encountered. After study of all the conditions, Wells Bros. Company, of New York, the building contractors, decided to use an electric shovel for this work.

The teaming was done by two-horse 40-cubic foot, end-dumping wagons, which had to descend rather a steep incline into the excavated part. It required only two lifts of the shovel to completely fill one of the wagons. A hoist and cable were used to assist the wagons up to the street level.

The operation of an electric shovel is a one-man job. The operator stood by the levers and had absolutely no assistance. No fireman was required, and the question of water supply was avoided, together with that of transportation of fuel. The electric shovel has the further advantage that in cold weather there was no danger from freezing, while in hot weather the operator is not troubled by discomfort due to boilers. The banking of fires at night, the delay of getting

up steam in the morning, and frequently the necessity for a watchman when the shovel was not in operation, are all features which will be appreciated by contractors.

+ +

Power Pumping for Contract Work

To reduce the cost of pumping out sewers, trenches, excavations, pier foundations, etc., is the function of the Atlantic Diaphragm Pumping Engine. Many contractors and municipalities which are still using ordinary hand pumps, requiring from two to eight men to operate, could no doubt use a gasoline-driven pumping outfit to advantage.

The manufacturers of the Atlantic engine, the Harold L. Bond Company, of Boston, have so designed the engine that it may be attached to various kinds of pumps to suit special kinds of work, and may even be attached to hand pumps which contractors may own. In use it is said that the engine may be operated for twenty-four hours a day without attention except the occasional filling of the oil cups and replenishing gasoline.



THEW SHOVEL AT WORK AT CITY HALL, BOSTON

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YOU sow a seed that is
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Special brands for every purpose—sunny or shady places, lawns, terraces; for city, park and seashore use. All brands composed of choicest, re-cleaned seed, carefully blended, and tested for germination.

Write for prices or any desired information on lawn making. Special Grass Seed Circular—free.

DREER'S GARDEN BOOK FOR 1913 contains much information helpful to those interested in civic improvements which include flowers, shrubbery, etc. Sent free to anyone mentioning this publication.

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**With the Right Tool
In the Right Way**

The Velvetlawn Grass Seeder quickly establishes beautiful lawns by putting seeds where you want them in just the right way. It drills the seed into the ground evenly and covers it uniformly. Birds, wind and rain cannot endanger lawns at seeding time where this unique machine is used. Guaranteed to do satisfactory work.

Our Special Booklet Tells



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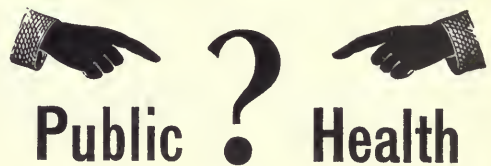
Saves Girdled Trees, Heals Cuts and Wounds,
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A Positive and Effectual Remedy for the Treatment of Fruit and Shade Trees when Damaged
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This catalogue of lantern slides sent for 4 cents in stamps. (Out April 1st.)

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ON THESE SUBJECTS
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**MATERIAL ON THE HOUSE-FLY and
"WHO WAS TO BLAME."**

EDUCATIONAL EXHIBITION CO.
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Send for a sample.



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The Atlantic engine has a capacity of 3,500 gallons per hour. The outfit is attached to a channel iron frame, mounted on low cast iron wheels with swivel front axle and drawing handle, and can be wheeled around on the ground by one man. The batteries, coil and starting switch are in a battery box. The gasoline tank has a capacity of one gallon, which is sufficient for operating the pump for eight hours. The water jacket and cylinder construction are said to make the engine absolutely frost proof, so that no serious damage can follow even though water should freeze in the water jacket. A special and original speed regulating device operates on the governor by increasing the tension of the spring on the governor weight and at the same time advancing the timing of the spark.

✦ ✦

A Tractor with a Track

In contracting work a tractor is often needed which will operate effectively on soft, yielding soil, loose sand or in other places where the ground is not firm. To meet this demand, and also to perform the ordinary work required of such a machine, the Holt "Caterpillar" tractor was designed. Its distinctive feature is the peculiar driving mechanism from which it is named. This consists of a steel track in the form of a belt running over two sprockets, of which the rear one is the driver, with the weight of the tractor carried on four-wheeled trucks resting on the inside of the track. The rear sprocket on each side is driven by a chain from a sprocket on the countershaft, the two sides being driven separately so as to permit steering the machine by driving on one side only. The sprocket engages with the inner side of the track, picking it up at the rear and carrying it forward around the front sprocket and down to the ground.



ATLANTIC PUMPING ENGINE AT WORK

The "Caterpillar" is adaptable to all contracting work—road building, reclamation work, clearing land of trees and stumps, etc. It has been used successfully in the contracting work on New York's new aqueduct, and in many other important undertakings in the United States and foreign countries. The manufacturers are the Holt Caterpillar Company of New York.

✦ ✦

A New Steel Frame Dump Wagon

In its Catalogue No. 805, published last month, the Studebaker Corporation illustrates and describes a new steel frame dump wagon possessing several distinctive features. Among these may be mentioned the dumping and winding device; the neck construction, lined both inside and out with steel plates of 9/64



CATERPILLAR TRACTOR AND ELEVATING GRADER

300,000,000 WIRE-CUT-LUG BLOCKS



No. 3074. Buffalo-Glenwood Road. 21 miles long. New York State Highway. Constructed June, 1911. Photo June 8, 1912, at Station No. 369. 13 miles from Buffalo City Line.

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| During the year 1910 | { | Corry Brick and Tile Co..... | Corry, Pa. |
| | | United Brick Co..... | Conneaut, Ohio |
| During the year 1911 | { | Kushequa Brick Co. | Kushequa, Pa. |
| | | Sterling Brick Co. | Olean, N.Y. |
| | | Reynoldsville Brick & Tile Co., | Reynoldsville, Pa. |
| | | Danville Brick Co. | Danville, Ill. |
| | | Paterson Clay Products Co..... | Clearfield, Pa. |
| During 1912 | { | Wabash Clay Co..... | Veedersburg, Ind. |
| | | Clinton Paving Brick Co..... | Clinton, Ind. |
| | | Alton Brick Co..... | Alton, Ill. |
| | | Deckman-Duty Brick Co..... | Cleveland, Ohio |
| | | Tuna Valley Pressed Brick Co..... | Bradford, Pa. |
| | | Foster Paving Block Co..... | Bradford, Pa. |
| | | Metropolitan Paving Brick Co..... | Canton, Ohio |
| | | Bessemer Limestone Co..... | Youngstown, Ohio |
| | | Murphysboro Paving Brick Co., | Murphysboro, Ill. |
| | | Binghamton Paving Block Co... | Binghamton, N. Y. |
| | | Peebles Paving Brick Co..... | Portsmouth, O. |

The combined output of these companies is 300 million blocks annually, or enough to pave a sixteen foot roadway 750 miles long. Hundreds of cities already have admitted Wire-Cut-Lug Block in their specifications and the number of city engineers recognizing their merit is growing. See that your specifications are right. Wire-Cut-Lug Block never have been rejected where submitted. *Write us for further evidence.*

THE DUNN WIRE-CUT-LUG BRICK CO.

CONNEAUT, OHIO

PATENTED IN THE UNITED STATES AND FOREIGN COUNTRIES

inch thickness, bolted together firmly; the hinged-top box, and the use of angle iron strips on the edges of the doors.

These and other features of the new wagon



STEEL FRAME WAGON CLOSED

are shown in the catalogue in several beautiful half-tone illustrations. Other types of Studebaker bottom dump wagons and dump boxes, contractors' carts, etc., are also shown.

A picture of the company's factories at South Bend, Ind., is accompanied with some interesting figures as to the magnitude of the



WAGON IN DUMPING POSITION

Studebaker business. The lumber yards alone cover 80 acres of ground, and the floor space of the factories aggregates 60 acres, turning out more than 100,000 vehicles annually.

† †

Security Sewer Rods

In cleaning obstructions from sewer pipes, it is important that the rods used shall be held

firmly together without slack and without danger of separation in the duct. Ease of coupling and uncoupling is also desirable. A type of sewer rod which is said to meet fully these requirements, while at the same time being capable of withstanding severe handling, is the "Security," manufactured by the F. Bissell Company, of Toledo, Ohio. The rods are of hickory, driven into iron sockets and spread by iron wedges. The rods do not bottom in the sockets. If the wood shrinks it can be tight-



COUPLING ACTION OF SECURITY SEWER RODS

ened by driving further on wedge. No rivets are used, because wood always breaks at rivet holes. The rods are light in weight and long runs can be easily handled by one man.

† †

Novel Use for Rock Drills

Work is now in progress for reconstructing the Manhattan approach of the Brooklyn Bridge to connect the bridge with a new subway loop. This work has required the removal of part of the arches of brick and concrete which support the old structure. On account of the heavy passenger and truck traffic on the bridge the use of dynamite was prohibited; hence the North-Eastern Construction Company, the contractors who are handling the



McKIERNAN-TERRY HAMMER DRILLS AT WORK ON THE BROOKLYN BRIDGE APPROACH

BRICK

The Permanent Pavement

Following will be found
a Directory of some of
the well-known Manu-
facturers of Paving Brick
and Block.

Alton Brick Company

Repressed Block and Dunn Wire-Cut-Lug Block
ALTON, ILL.



Bessemer Limestone Company

YOUNGSTOWN, OHIO

*Repressed Bessemer Block and
Dunn Wire-Cut-Lug Blocks*

BIG FOUR CLAY COMPANY

CITY NATIONAL BANK BLDG.
CANTON, OHIO



BINGHAMTON PAVING BLOCK CO.

BINGHAMTON, N. Y.

MANUFACTURERS OF THE FOSTER BLOCK

Made Under the DUNN WIRE-CUT LUG LICENSE

WORKS: BINGHAMTON, N. Y.

OFFICE: BRADFORD, PA.

CLEARFIELD BRICK MANUFACTURING CO.

Shale and Fire Clay Paving Block

TWO PLANTS

LARGE CAPACITY

CLEARFIELD, PA.

IN addition to the Directory of Paving Brick Manufacturers on this and the two following pages, other Paving Brick advertisements will be found on advertising pages 8, 9 and 56.

work for the New York Department of Bridges, decided to use hammer drills for breaking up the masonry. The drills used are of the "Busy-Bee" type, manufactured by the McKiernan-Terry Drill Company, New York. These drills are fitted with chisel bits, by which the

brick and concrete masonry is broken up in pieces small enough to be easily removed. By this method all danger of damage to the rest of the structure is prevented. The drills weigh about 50 pounds each, and are, therefore, easily handled by one man.

FOR MUNICIPAL PURCHASING OFFICIALS

A New Lighting Pole Company

Mr. Elmer P. Morris, whose name has long been identified with the manufacture and sale of ornamental lighting poles and fixtures, has withdrawn from the Morris Iron Company, of Frederick, Md., and has made arrangements with one of the largest foundry and machine shops in the East to manufacture an extensive line of ornamental poles and brackets. The corporate name of Mr. Morris' new company is the Elmer P. Morris Iron Works, with offices and engineering department at 90 West street, New York City. The officers are: Elmer P. Morris, President; D. E. Morris, Vice-President; J. W. Bache, Secretary-Treasurer. The Canadian end of the business is to be handled by the Canadian Morris Iron Company, Ltd., with offices at Montreal and Quebec. A complete new catalogue, just issued, will be sent on application to the company's New York office.

✦ ✦

A New Nursery Catalogue

The 1913 catalogue of the Whiting Nursery Company, of Yankton, S. D., is the twenty-ninth annual catalogue published by that company. It contains illustrations, descriptions and prices of ornamental and fruit trees, plants, shrubs, etc., in addition to a spraying calendar and other information.

✦ ✦

Coleman Boulevard Lamps for Des Moines

The Commissioners of Des Moines, Iowa, have placed an order with the Hydro Carbon Company, of Wichita, Kan., for 400 lamps of the Coleman Boulevard type for use in the city parks.

The Coleman Boulevard Lamp is a gasoline pressure lamp of high candle power. It is said to be brighter than the average electric arc, and will burn large or small mantles, according to the amount of light desired. Many of the lamps purchased are intended principally to line the park drives; these are to be of lower candle power than those used where a brighter light is wanted.

This lamp is usually sold with a five-gallon tank and automatic cut-off to extinguish it at

any given hour, but the Des Moines lamps will be equipped with a smaller tank and filled each day with just sufficient gasoline to burn the desired number of hours. Park watchmen will take care of and light the lamps, so that practically the only expense will be the fuel and supplies required.

✦ ✦

Grether Fire Equipment Company

It will interest many fire chiefs to learn that William Grether, for the past seven years secretary of the Larkin Manufacturing Company, of Dayton, Ohio, resigned his position last month to enter into a newly organized fire department supply business under the name of the Grether Fire Equipment Company.

The new company will have its headquarters at Dayton, Ohio, and will handle a complete line of fire supplies, including fire hose, nozzles, play pipes, siamese connections and all kinds of brass goods, hose carts, chemical engines, turret nozzles, smoke helmets, ladders and other devices for the fire service.

A handsomely illustrated catalogue, just issued by the company, may be obtained on application.

✦ ✦

"The Story of My Ideal Playground"

This is the title of an attractive little pamphlet, written by a playground committeeman and published for free distribution by the Fred Medart Manufacturing Company, of St. Louis, Mo. It contains some excellent arguments for municipal playgrounds and for the use of adequate equipment.

✦ ✦

To Superintend Waterproofing Work

To meet the demand of architects and engineers for superintendence of the waterproofing work on any structure where it is desired to have a check on the contractor, a new department has been added by the Ceresit Waterproofing Company, of Chicago. This will be known as the Superintendent Department, and bond of guarantee for the proper performance of such work on concrete, stone or brick structures will be given.

THE CLEVELAND BRICK AND CLAY CO.

Office: Engineer's Building
CLEVELAND, O.



CLINTON PAVING BRICK COMPANY :: Clinton, Indiana

are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire Cut Lug Block which is the acme of perfection for street paving material. Write us for samples and prices.

CLINTON PAVING BRICK COMPANY :: Clinton, Indiana

COPELAND-INGLIS SHALE BRICK COMPANY

Copeland-Inglis Block

BIRMINGHAM

ALABAMA

THE DANVILLE BRICK COMPANY

Danville Repressed & Dunn's Wire-Cut-Lug Blocks
DANVILLE, ILL.

"THE
BEST
BLOCK
MADE"



DECKMAN-DUTY BRICK CO.

Repressed and Dunn Wire-Cut-Lug
"Medal" Paving Block
CLEVELAND, O.

GLEN-GERY SHALE BRICK COMPANY

Manufacturers

Shale Paving Block and Brick

Large capacity.

READING, PENNA.

Hocking Valley Brick Company HOCKING BLOCK

A High Class Shale Paver

PLANTS, Logan, Ohio

GENERAL OFFICE, Columbus, Ohio

Capacity Fifteen Million Annually



McAvoy Vitrified Brick Company PHILADELPHIA, PA.

"McAVOY BLOCK"

The American City

VOL. VIII. NO. 4

APRIL, 1913



Municipal Economy

Statistical reports of our American municipalities continue to give cause for anxiety as to future economic conditions. In spite of all that has been said and done, the drift of population is still away from the rural districts, and towards the cities. A generation ago one-third of our people were city-dwellers and two-thirds lived in rural districts; now the population is almost equally divided between the city and the country. Speaking in generalities, the problem of our fathers was to make two people produce food enough for three; our problem is to make one person produce food enough for two. It is a more difficult problem. Our rising food costs and other signs indicate that we are approaching a condition of unstable equilibrium in this regard. Obviously the tide cityward must before long recede. The cities cannot continue to grow indefinitely at their present rates. Economic laws are bound to interpose a natural check.

Couple with these facts the increasing cost of city government and especially the increasing bonded indebtedness. The recent special report of the Bureau of the Census on financial statistics of cities of over 30,000 inhabitants, printed in abstract in the March number of *THE AMERICAN CITY*, showed that in 145 cities the annual revenue receipts had increased in eight years from \$20.12 to \$27.24 per capita, a gain of 35.4 per cent. The payments for expenses and interest increased from \$16.37 to \$20.53 per capita. The governmental costs were higher in the larger cities. In New York City the budget ap-

propriations were \$26.90 per capita in 1900 and \$34.30 in 1910. The report also shows that in many cities, and especially in the larger ones, the bonded indebtedness is increasing alarmingly.

As long as the cities continue to grow and assessed valuations continue to increase, the danger ahead is not so easily discerned; but what will happen when our cities cease to grow, when the interest on the debts incurred begins to bear more heavily on the taxpayers? Will the remedy be retrenchment or repudiation?

Were the trouble confined to cities the case would be bad enough, but it is not confined to them. State debts are increasing, and county debts, and debts incurred by metropolitan districts, and by public service corporations. Thinking people are becoming troubled as to how these debts are to be paid. There is grave danger that our reckless spending may bring a terrible retribution all along the line—from the man who mortgages his house to buy an automobile to the nation that squanders its millions on battleships and standing armies.

What is to be done? One thing certainly, and that is to use better judgment in our expenditures and especially in our bond issues.

The Need for Discrimination in Public Expenditures

Everyone can see the unwisdom of issuing bonds to pay current expenses, but this differs not in kind but only in degree from the practice of issuing long term bonds to pay for structures that will wear out before the bonds mature. The people of the

state of New York have violated this principle of sound finance most flagrantly by voting at the last general election to authorize the issue of 50-year bonds to the extent of fifty million dollars for the construction of roads, which, in the natural course of events, will wear out and need repair long before the bonds come to maturity. To the end that this principle be not violated, closer coöperation is needed between the financier and the engineer. Greater attention must be paid also to provision for the extinguishment of debts, to the depreciation of property, and more than all, perhaps, to the practice of old-fashioned economy, both personal and public, and—what is involved in this—to the prevention of waste. The guiding principle should be that a dollar spent should bring a dollar's worth of service.

In the field of public hygiene and sanitation, these general principles apply as well as in other departments of public service, and failure to observe them will bring sanitarians into disrepute. The magical achievements of bacteriology and preventive medicine during the past quarter century have yielded results far and away of greater benefit to the world than their cost. The purification of water has been proved over and over again to be of vastly more benefit to a community than its cost, and this might be said of other sanitary works. The death-rate of the civilized world has steadily declined. This has been accomplished for the most part by a public health service not too well organized, by officials partially trained, and with appropriations inadequate to the task. The motto of the City Health Department of New York is that "Public Health is a Purchasable Commodity." Disease can be stamped out only by constant vigilance, and this demands adequate funds.

Zeal for Public Health Sometimes Misdirected

But even in matters pertaining to public health and sanitation there is need of discrimination. There is danger lest zeal for the public health be carried too far in certain directions. Some sanitarians have said that "no expense can be too great if a human life is saved." This is not true if the cost is paid at the expense of generations to come, and it is not true if the same amount of money spent for

saving the one life could have been made to save many more lives if spent in a different manner. We all rejoice in the reduction of the death rates of our cities, but we are coming to realize that, as Professor Jordan has said, there are fruitless as well as fruitful lines of endeavor in the public health service. Studies of the specific death rate from different diseases have shown that our activities and major expenses have not always been directed at the diseases that do the most damage. There is need of a more careful and discriminating study to determine in what direction money from the public health service can be spent so as to bring the greatest results. Studies in this direction are now being made by the Sanitary Engineering department of Harvard University.

Nowhere else is more discretion needed, perhaps, than in the efforts made to improve the quality of our food supplies. Here exaggeration is in danger of running riot. Ice is said to transmit disease. Perhaps it can, but almost never does. Polluted oysters are said to transmit typhoid fever. Doubtless they can, but they very seldom do. There is need of studying all these matters from the quantitative as well as the qualitative standpoint. So, also, the egg question, the milk question and the use of preservatives and the effect of cold storage must be studied as to the magnitude of possible dangers, and the element of cost cannot be ignored even by sanitarians and hygienists. Pure food means more expensive food; and if the requirements are stricter than they need be, it means useless expense.

If, in our enthusiasm for the saving of life and the protection of health, we pile up debt, *we must remember that in the long run debt means poverty and poverty means deprivation and disease*, so that in the end we may fail to accomplish that for which we strive.

But it does not pay to be pessimistic. In spite of forebodings we have faith in the future of American cities. Rapid city growth is not confined to this country alone. In Germany cities have grown even more rapidly than here, and for the most part German cities are well managed. European experience should give us encouragement. It should also teach us many lessons.

GEORGE C. WHIPPLE.



THE GREAT MARKET BUILDING AT MUNICH, THE MOST MODERN OF THE WORLD'S MUNICIPAL MARKETS

Wholesale Terminal Markets

A New Idea in Public Markets for American Municipalities—A Symposium of Marketing Methods in Leading European Cities

By Hon. Cyrus C. Miller

President of the Borough of the Bronx; Chairman, Mayor's Market Commission, New York City

IN view of the great industrial advances made in this country along many lines, it is surprising, when one looks into the subject, to find how far behind the times we are in our methods of provisioning our cities. The cities have sprung up and grown so fast that new conditions of trade have arisen in advance of our adjustment of facilities to meet them. In our enthusiasm over our rapid industrial growth we have not foreseen the consequences of the tremendous migration from country to city that it has entailed. They are now being forced upon our notice. The cost of food is high and is rising, and the number of people engaged in its production is not increasing nearly so fast as the number of those who produce not a single thing they consume.

An analysis of the causes of the present high prices is important in so far as it suggests means of bettering the situation. There have been great increases of late years in costs of production; farm lands

have risen in value and competent farm labor has become scarce and high-priced; the long distances goods are carried make careful packing necessary, and where this is not understood there is much loss through spoilage, the cost of which must be added, of course, to the sound goods; in the cities we find the methods of marketing the goods entirely haphazard and the terminal facilities entirely inadequate. We are confronted with the conditions—a trend of population which we cannot check, changes in the habits and demands of the people which we cannot influence, and faulty methods of doing business; and the question for us to answer is, "What can we do to meet the new demands?"

We have reached a point of high industrial organization and efficiency, but people are finding that income and outgo are not commensurate and there is everywhere a spirit of unrest. The industrial structure is shaken from time to time by strikes and bitter antagonisms. People do not resort

to these measures if their incomes are sufficient for their reasonable needs. If food is plentiful and cheap, they are not quick to feel the pressure of economic conditions. There is no more important question of public concern before us to-day than the question of better distributing the country's food supply. It is at the basis of the national life.

In provisioning large cities from far distant points, we have a new problem in food distribution. Our present practices, for the most part, are the survivals of customs which were effective in their day but are now outgrown. As a result there is less confidence and much distrust and timidity in business. We let our food supply filter into our cities, where we ought to let it flow in without obstruction. We conduct our business on a minimum basis—the dealers afraid to take large consignments for fear of glutting the market, the farmers afraid to raise large crops for fear they will have the most part left on their hands. There is little publicity given to prices; there is no registration of dealers or producers; there is no uniformity of standards, grades and methods of packing; and there is great ignorance, on the part of shippers, of the needs of the markets into which their goods are sent. If the varied supplies for all the households on any street were delivered on the curb in front of the houses and the people had to spend time and money sorting them and taking them into their houses, everybody would complain of such a method of doing business. And yet that, multiplied many thousand times, is the method pursued in provisioning our cities.

In many European cities they are much farther advanced than we in this matter. Marketing has always been regarded there as a governmental function, and in their methods they have kept abreast of the times. They have long recognized in many foreign cities that the value of a public market lies in its effectiveness in cutting out some of the intermediate processes necessary in private business, and that the only type of public market that can do this is the large wholesale terminal market, whereinto all the railroads coming into the city may run. The carriers that bring us today the great bulk of our food supplies are the railroad and the steamship, and if our markets are to be serviceable they

must give direct access to these carriers. Only in this way can the losses that now occur from the necessity of trucking, handling, delays and spoilage be avoided.

Every one of our cities presents a problem that in its details is different from that of every other, and we cannot hope to be able to draft a pattern that will fit all. We can, however, by a careful study of what has been worked out elsewhere, arrive at very definite notions of the true principles of trade which underlie the best solutions of the problem, and they are everywhere the same. So, while a consideration of foreign market systems may not suggest details of buildings and administrative routine that we can apply directly to any American city, such a study reveals clearly the principles on which municipal market systems should be based, and shows us some things to avoid.

Berlin, Germany

One of the most carefully planned municipal market systems in Europe is that in the city of Berlin, Germany. It was put into operation about 25 years ago, the plan including a terminal wholesale market situated on the railroad and a series of 14 retail markets throughout the city. The expenditure for the system was over \$7,000,000, and it is administered in such a way as to yield a profit to the city of over \$130,000. The terminal market is a two-story structure, which has facilities for handling about 50 carloads of goods at once, and includes stands for the dealers and storage space. The goods brought to the market are sold either by the producers, by the commission dealers and wholesalers, or at auction by the municipal sales commissioners. There are six of these latter officials, bonded to the city and forbidden to be interested directly or indirectly in the trade in market wares of any kind. They are permitted to collect a certain fixed percentage of all sales made. They handle only about one-fifth of all the business done in the market, but the publicity given to their transactions by the daily reports of average prices which they issue is said to have a steadying effect on the whole market.

The market system is administered by a municipal market deputation of 15 members, which has charge of all the details of administration; appointment of officials, collection of rentals, fixing of charges, etc. There are minute regulations to ensure good sanitary conditions and cleanliness in all parts of the markets and a system of inspection, carried out by a staff of 600, to prevent the offering for sale of impure food of any kind.

While the central market of the system, the wholesale terminal, has been markedly successful, the district retail markets that were established at the same time have not. In fact, of the fourteen originally established only four are now in operation, and of these only two



PLAN OF BERLIN WHOLESALE TERMINAL MARKET

are really successful. It has been found that the dealers in these markets could not, or, at any rate, did not sell as cheaply as the private dealers in the small retail stores, and the trade in the markets has steadily declined.

Frankfort, Germany

The city of Frankfort has three market buildings, built respectively in 1879, 1883 and 1899 for both wholesale and retail trade, but at the present time they are considered entirely inadequate and do not serve either the wholesale or the retail trade as they should. The city authorities have during the past year or two given much careful study to the subject and have come to the conclusion that the increasing number of small retail stores are efficiently performing the retail distribution of the city's food supply, and that the greatest need is for a wholesale terminal situated on the railroad. They are now working on plans for such a terminal market and expect to commence its construction in a short time.

Hamburg, Germany

This city is the main distributing point for fish for all Germany. It is brought to the market by fishing cutters, is imported by rail from Denmark and Sweden, and by ship from England, Scotland and Norway; and all that has not been previously arranged for by agreement between shippers and dealers is sold at

public auction by the market auctioneers. There are two of these officials, appointed by the Hamburg Senate, who receive a commission of 5 per cent on all sales made, 1 per cent of which they pay to the Hamburg Government. The dealers who take advantage of the auction sales pay no other fee to the Government except this percentage to the auctioneer. The Government, out of its part, furnishes light and water, cleans the halls and disposes of the waste. Fish that is pronounced unfit for food is immediately sprinkled with petroleum, so that it shall not by any chance be used. Vessels using the quay alongside the market halls are required to pay a toll which entitles them to the use of the electric and other cranes for the discharging of their cargoes. The amount of fish sold in this market is not infrequently 150 tons per day. The majority of purchasers at the market are local wholesale dealers, many of whom have branch houses in other cities.

About half of the fruits and vegetables used in the city are grown in the surrounding country and are brought in in wagons and in boats coming down the Elbe. Plans are now being worked out for a terminal market, which shall provide space for the farmers' wagons as well as facilities for disposing of what comes in by rail and water. One feature of the new market is to be public auction sales, which are considered a great safeguard to the interests of the farmers.

Munich, Germany

The terminal market in Munich is the newest of any of the markets of Europe, it having been completed only a little over a year ago. It includes four connecting market halls, a post office, custom house and restaurant, and cost nearly \$1,000,000. It has direct railroad connections, so that there is no unnecessary handling and trucking of the goods before they are offered for sale. It has ample cold storage space in the cellars, which are connected with the main floor of the market by nine large lifts for heavy consignments, and many smaller ones connecting individual stalls with the space below. The floors are of concrete and every stand is fitted with running water. The cellars are lighted by electricity and are carefully inspected to ensure cleanliness.

The reaction which the establishment of this market has had on the surrounding farming districts is remarkable. When the market was planned, its size was calculated on the basis of the amount of produce the city had been using up to that time, but the authorities have now found that the farmers, finding that they have a sure and steady market for all they can raise and a quick remittance of the money due them, are sending so much to the market that already a building twice as large is needed. The farmers are well satisfied and, at the same time, the prices to the consumers are low.

Budapest, Hungary

The market system of Budapest consists of a large central establishment, a two-story fireproof building devoted principally to wholesale operations, and six branch markets where the trade is generally retail and where everything is sold from food products to hardware, clothing, dogs and cats. The markets are maintained by the receipts from the rents of stalls, scales, etc., and in spite of the fact that very low rents are charged the receipts for 1906 exceeded expenditures by over \$100,000.

The markets are under the control of a municipal commission, which formulates the regulations, sanitary and administrative, governing them. These are minute and carefully enforced, so that the sanitary conditions of the markets are admirable. The commission also publishes a daily report of wholesale prices. No one is allowed to rent a stall who has an outside shop for the sale of similar goods.

Vienna, Austria

Vienna, with a population of 1,700,000 people, has seven market buildings and about forty open-air market places. The buildings are large halls with stone floors and stalls partitioned off with wire screening. The market halls are kept scrupulously clean and all goods sold are carefully inspected. The administration is regulated by municipal ordinances and is under the general supervision of market commissioners appointed by the municipality. The choosing of market places and market hours is done by the Board of Aldermen.

Not merely land and water produce, but general farm and household requisites, are sold

at these markets. Outside buying is strictly controlled, owners of boats on the Danube or wagons on the public streets paying toll to the municipality on any sales. Over \$60,000 profit is the average annual yield of the markets to the city treasury, and it is generally agreed that the market system tends to keep down the price of foodstuffs.

Paris, France

More famous than the Berlin market, though not quite as up to date in its facilities, is the great central market of Paris, the Halles Centrales. This is a large wholesale market consisting of 10 buildings and covering 22 acres of ground, originally planned by Napoleon and begun in 1854. The entire cost for land and buildings has been about \$10,000,000, and it yields a return to the city of about 15 per cent. The market buildings include ample storage space and stands for dealers, but one thing lacking to make them thoroughly up to date is the absence of railroad connections. Everything that comes by rail has to be trucked to the market, which, of course, adds to its cost. At one time a plan was projected to make a connection by means of a subway, but it was abandoned by reason of the great expense involved.

The market system is under the supervision of the Prefecture of Police, and is one of the most carefully administered institutions in Europe. All wholesale dealers must be French citizens and must give a bond of not less than \$1,000, and must meet various other requirements, before they are allowed to receive and offer goods for sale in the market. The goods brought to the market are sold either by auction by the municipal sales commissioners, who are termed "representatives of the shippers," or by private bargain and sale. The municipal sales commissioners, like those in Berlin, are bonded to the city and are forbidden to have any interest in the trade in market wares. The market prices which they publish are the prices for all the surrounding country. The efficiency of the system of inspection in the markets is indicated by the amount of foods condemned and seized as unfit. This was in 1906, 400,000 pounds of meats, 160,000 pounds of fruits and vegetables, 500,000 pounds of sea fish, 100,000 dozens of eggs, etc.

The Paris system as originally laid out included 33 district retail markets, but, as in Berlin, these have steadily decreased in popularity. They do not undersell the small private stores and do not serve the convenience of customers as well, and the buildings are gradually being given up to other uses. Some are used as garages, some as steam laundries, fire houses, storehouses, etc.

Lyons, France

The city of Lyons has a large central market building of fireproof construction, covering 38,000 square feet of ground. It was opened in 1859. There are also 17 smaller markets in different parts of the city. The central market was built by a real estate and building company. The contract for the building gave to



OUTSIDE THE HALLES CENTRALES, PARIS, SHOWING HOW THE SUPPLIES OVERFLOW INTO THE ADJACENT STREETS IN THE BUSY SEASON

the company all the rent for stalls and auction space for five years, the city guaranteeing an annual minimum income of about \$32,000, with the proviso that receipts in excess of \$42,000 should be divided equally between the city and the company. The concession to the company was fixed for 50 years, but the city bought the market for \$887,000 a year after it was opened.

There are in the building over 200 stalls, and a space in the rear of the hall is set apart for auctions, which are held each day. Meat, vegetables and provisions of all kinds are offered for sale at these auctions, and always in wholesale quantities. For the protection of the people who rent stalls in the market it is provided, by law, that all products sold at auction must come from outside the city. In proof of this the presentation of a certificate from a railway or steamboat officer is required before goods may be offered for sale. This prevents speculation in food products by the local dealers. The auctions are always public. They are a great boon to the poorer people, as it is possible for a number of families to combine in the purchase of a quantity of game or fish and divide the expense. This brings within their reach luxuries which they otherwise could not enjoy. Sales at retail are prohibited.

The auctioneers are given by the city a monopoly of the auction market for ten years,

during which time the city binds itself not to make any other like contract. They are licensed after making proofs of solvency and they bind themselves to pay to the city in monthly instalments a sum equal to 2 per cent of the total auction sales, which sum cannot be less than 10,000 francs (\$1,930) a year for one auction stand nor more than 50,000 francs (\$9,650) for the four auction stands. The auctioneer is forbidden to buy anything at auction for his own business or to have an agent buy for him. The auction market of Lyons is quite famous; dealers in other cities will often avail themselves of it to get rid of overstocks of provisions.

Havre, France

This city, which has a population of 139,000, maintains 12 municipal markets of different kinds, there being two covered markets, five in public squares, a fish market, a flower market, two second-hand markets and a cattle market in connection with the municipal slaughterhouses. Two of the general markets have wholesale sections. The markets are maintained by the receipts of stall rentals and pay a return of over 6 per cent on the capital invested, and in the case of the fish market 10 per cent. In order to make the markets the chief distributing centers for food supplies

the regulations forbid the gardeners and farmers to offer their goods for sale on the way to the markets, and they can deliver goods to shopkeepers only after the wholesale markets are closed—8.00 A. M. in summer, and 9.00 A. M. in winter. The sale of food supplies brought by water is also forbidden on the quays, and peddlers cannot cry their wares within 475 feet of any market. To prevent monopoly no person is allowed to lease more than two places in a municipal market, and subletting is allowed only with the written consent of the authorities. The sanitary regulations are strict and carefully enforced.

London, England

London differs from most of the Continental cities in that it has no municipal retail markets. Its markets are almost entirely wholesale, and there are nine of them, some with railroad connections, in which are sold meat, poultry, fish, vegetables, fruits, flowers, and where the local tradesmen go to buy. The city makes on its market system a profit of \$156,000 a year.

There is a group of markets administered by the London Corporation, which has grown up gradually and is estimated to have cost over \$8,000,000. Chief of these is the Smithfield market, covering about eight acres. There are to be found at wholesale meat, poultry and provisions, vegetables and fish. In the last 20 years the development of cold storage processes has lowered the quantity of home-killed meat and remarkably increased the importation of refrigerated supplies. Last year the wholesale market disposed of 433,723 tons of meat, over 75 per cent of which was imported.

Most of the tenants at Smithfield are commission salesmen, who pay weekly rents for their shops, all fittings being supplied. On Saturday afternoons there is a retail "People's Market," where thousands of the very poor buy cheap joints. The inspection is very strict, every precaution being taken to ensure cleanliness, and breaches of regulations are punished by fines or imprisonment. All condemned carcasses are sent to a patent destructor and reduced by steam pressure to a powder, which is used as a fertilizer.

This central group also includes a fish market which has direct rail connection. A new market building has recently been added, known as Farringdon Market, for the sale of fruits and vegetables.

In another part of the city is the famous Billingsgate fish market, which dates back some 600 years. This is situated on the river Thames and receives large quantities of fish directly from the boats. Those brought by rail have to be carted to the market in vans. The sales in this market are largely by auction, though some of the dealers dispose of their goods by private sale. The market is hampered by narrow street approaches, but a very expeditious system of direct delivery of fish from the Thames side of the market building enables the auctioneers to dispose of the supplies very quickly. Stands in the market are in great demand and much more space is needed to carry on the business. This market cost over \$2,000,000 and is maintained by tolls collected from all vehicles and boats delivering goods to the market. Altogether the tolls average over \$26,000 per annum. All parts of England are supplied from this market and it exports every day to Paris. In 1907, 174,332



SMITHFIELD MARKET, LONDON, AS IT IS TO-DAY



BILLINGSGATE FISH MARKET, LONDON. UNLOADING FISH FROM STEAM CARRIERS DIRECT INTO THE MARKET

tons of fish were brought into the market. Sales are made so quickly that there is very little spoilage.

Spitalfields and Borough markets are for the sale of vegetables and fruits. They are open every day, but have stated market days when the market gardeners attend.

The Great Northern Railway maintains in London a wholesale terminal market for the sale of potatoes, turnips, cabbage and celery. Many dealers in this market also maintain stands in the municipal markets and consign their goods directly to those markets for sale. The average receipt of vegetables at this railroad terminal is 75,500 tons.

Covent Garden Market, the great fruit, vegetable and flower market of London, is owned and maintained by the Duke of Bedford, in whose family it has been for hundreds of years. Formerly producers chiefly sold in the market, but, with the expansion of the city, the growers have gradually given away to dealers and commission men who pay a rental of 25 cents a day per square foot of space, and on the produce on a regular scale according to its nature. Although this market has direct access neither to river nor railroad, it does not diminish in importance. It is crowded and hampered by narrow approaches, but is known to pay a large profit. As it is under private management, no figures are given out.

The London Corporation also maintains two cattle markets, one outside of the city at Islington, where \$2,500,000 has been spent on the

market and slaughterhouses attached, and the Deptford cattle market on the Thames. The latter is the point of entry for imported cattle, and extreme precautions are taken to prevent the entry of cattle disease that might spread infection. The animals are slaughtered within 10 days and the meat sent to Smithfield for sale.

Liverpool, England

The Corporation of Liverpool maintains six markets, erected at a total cost of \$1,500,000, under the control of a committee on markets appointed in November of each year. This committee meets twice a month and has charge of all maintenance, repairs, enforcing regulations, etc. The direct administration of the markets is in the hands of a superintendent. The total income of the markets in 1911 amounted to over \$185,000 and the expenditure to about \$100,000, thus leaving a profit of \$85,000, which was applied in relief of the city rate. The city of Liverpool has a population of about 800,000.

A large proportion of the vegetable products offered for sale at the markets is grown by farmers and market gardeners residing within a radius of 15 miles from the city. These products are brought to market by the growers, so that customers have the advantage of fresh supplies. The wholesale fish market is the distributing center for the whole of Liverpool and the surrounding district, and there are daily consignments from other fishing ports

and also from steam trawlers which discharge at Liverpool. The weight of fish offered for sale in the market in 1911 was estimated to be 17,934 tons. The estimated weight of vegetables and other produce, exclusive of fruits, brought to the wholesale vegetable market during 1911 was 81,122 tons. In the fruit section of the market there are daily consignments of English and foreign fruits, and a very large trade is carried on, principally with shopkeepers.

The cattle market was established in 1832 by a private company and was bought by the city corporation in 1900 for \$185,652, as they considered it desirable that the cattle trade of the city should be under municipal control. It covers an area of 37,000 square yards and receives each year an average of 60,000 cattle and 400,000 sheep, mostly from Ireland.

One of the city's markets, called St. Martin's Market, which was erected in 1826, is maintained for the sale of second-hand clothing, peddler's wares and manufactured goods. It supplies the requirements of a great number of poor persons, many of whom live in the district near the market, and the corporation has granted the use of stalls at very low rates. The market from a financial point of view is one of the least prosperous of the city, but it serves a useful purpose in supplying the poorest class of the community.

Manchester, England

Manchester, a city of about 700,000 people, owns markets covering a total area of 28 acres and including a dozen separate markets, slaughterhouses, cold storage premises, etc. Since 1868 the markets have paid the city over \$3,160,000 in relief of taxation. The fruit and vegetable market is one of the largest in the country and is a center of distribution for a large area, supplies coming to it from surrounding districts and from almost every country in the world. The fish market is both wholesale and retail, and is second in size only to the Billingsgate market in London. Cold storage accommodation is provided for the retail fish market.

The city maintains an abattoir which is one of the best equipped in the country. In 1908, 226,815 animals were slaughtered and 628,297 exposed for sale there. Adjoining the abattoir is a cold storage plant, costing \$389,320, which was erected in 1894. The building is thoroughly up to date in equipment and sanitation. Accommodation is provided for chilling 1,200 sides of beef in 24 hours. The plant in 1908 was used for storing fish, dairy products, fruit, flowers, vegetables, etc., as well as meat. The city also maintains a foreign animals' wharf market, covering over 12 acres. Sales in this market are largely at auction.

Birmingham, England

The city of Birmingham has owned its market system since 1824. It now consists of six market buildings, with a total space under roof of nearly nine acres. The markets paid the city in 1909 a profit of \$18,918, after interest, sinking fund and expenses of main-

tenance were paid, which sum was applied in the relief of taxation. The total outlay of the city for its market system has been \$2,156,362.

The market and toll rights of the city include the privilege to regulate the sale of all meat, vegetables, fruit, game, poultry, eggs, market produce, and fish by wholesale and retail. These businesses can be carried on by individuals only in their own shops, the city having the power by act of Parliament to prevent any company or group of individuals from building and operating a market and renting space to persons engaged in selling meat, vegetables, etc. The city has, therefore, a monopoly of the market rights, which it guards most carefully, permitting no rivalry and so arranging affairs that there would be little temptation to establish a rival market even if the city should permit.

Rents for stands in the wholesale vegetable, fruit and flower market are at the rate of 18 cents per square yard per week; in the wholesale fish, game, poultry and egg markets, 24 cents; and in the wholesale meat market, 40 cents per square yard per week. The markets are under the management of the Markets and Fairs Committee of the City Council, which has charge of the administration, inspection, weights and measures, etc. The direct management of the market is under a superintendent, who is paid a salary reaching a maximum of about \$2,400. Upon retirement he will receive a pension of two-thirds the average salary paid him during his last five years of service, towards which he contributes under the superannuation scheme of the city.

Kidderminster, England

Kidderminster is a town of only 25,000 people, but has a cattle and wholesale vegetable market which was constructed in 1871, and which covers an area of 9,000 square yards and contains 457 sheep pens. Three firms of auctioneers do business in the market, sales very rarely being made privately. The attendance at the wholesale vegetable market during the year averages 5,000 carts, 600 wagons and 700 barrows. Buyers come from many neighboring towns. The market has cost nearly \$25,000 and pays a yearly profit to the city. There is also a retail butter market.

Glasgow, Scotland

The municipal markets of Glasgow, a city of about 800,000 people, are known as the cattle market, which includes the horse market; meat market; fish market; cheese market; clothes market; fruit market, and the bird and dog market, all of which are under the management of a committee of eighteen. The Lord Provost is a member of the committee and of all sub-committees. Each market is situated in the part of the city best adapted for its trade. The buildings are solid stone structures and the management and control are of a high order.

The fruit market is the principal center for the sale of fruit and vegetables in the west of Scotland. The dealers hold auctioneers' licenses and sell most of their goods by auction.

The sales are held daily. Retail trade is still carried on, but is diminishing every year. The stands are rented monthly and bring in a revenue of \$25,675.

The trade in the cheese market is entirely wholesale and in the fish market is almost entirely so. In 1908, 1,205,741 packages of fish passed through the market.

The central meat market was opened in 1879 and is the central depot for the wholesale meat business. There are 90 stands in this market. There is also a cattle market, slaughterhouse, horse bazaar, foreign animals' wharf and a destructor for condemned carcasses.

The surplus on the entire market system was in 1908 \$14,000.

Dublin, Ireland

The city of Dublin, which has about 300,000 people, has four markets, three built by the city and one presented to the city by a wealthy citizen. The city-built "food market" is for the sale at wholesale of fish, game, vegetables and fruits. It covers an area of 118,050 square feet and cost \$483,681. It is built of brick and limestone, with concrete floors, and is well lighted and ventilated. The annual running expenses are about \$8,500, and the receipts from rents, etc., \$22,000. Another market in the city is for the sale of food products, and has a section for the sale of old clothes, which must be disinfected at the market before being offered for sale. This market is run at a loss of about \$6,000 a year. The other markets of the city are a cattle market and a market for hay and straw, none of which are covered markets.

The Kind of Market American Cities Need

In an American city of any size we need a wholesale terminal market where all the railroads coming into the city may come. It should be on the waterfront also, if possible. It should have ample room for handling all the food products brought into it, and for storing in cold storage all the foods brought in refrigerator cars, without intermediate trucking and handling and change of temperature. It should be surrounded with broad streets, so that the wagons of the retailers may not be delayed. Facilities should be given for sales at auction by licensed auctioneers. Strict rules should be enforced for the destruction of impure foods. A daily or weekly bulletin should give the people detailed statements of the quantity of foods in the market and likely to be in the near future, and the prices received at the auction sales of the day; and the women's clubs and other organizations should be urged to cooperate in giving this information wide publicity. The farmer must learn to pack and grade his goods so they will travel safely and meet the needs of the customers in the markets without the regrading which now is necessary and expensive. After the goods come to the city market it is the duty of the city to see that they are distributed economically.

Some Suggestions from a Consumer's Point of View

MANY interesting ideas in regard to the distribution of food products are set forth in a recent pamphlet entitled "Some Suggestions in Regard to the Present Agitation for the Establishment of Municipal Wholesale Terminal Markets from a Consumer's Point of View." The author is a member of the Advisory Board to the Mayor's Terminal Market Commission, Mrs. Flora Spiegelberg, 67 Riverside Drive, New York, from whom copies may be secured for the asking.

Mrs. Spiegelberg's brief is written with New York's problems primarily in view, and recommends six wholesale terminal markets in different parts of the city, each to include a retail division in the same building. Many of the suggestions contained in the pamphlet, however, should prove of value to other municipalities considering the market problem. For example, the author recommends a bureau of information to bring about active coopera-

tion of producers, marketmen and consumers.

"For instance, the publication of a 'Weekly Market Bulletin' advising the farmers or producers in regard to grading, packing and labeling their goods as to quality, in order to find a quick and permanent market for their individual goods, so that their particular 'brand' of goods may be relied upon at all times and prove best sellers; the inferior goods which are also needed selling for less. There will be a market found for all grades, but from an economic point of view they must be labeled in a perfectly reliable manner.

"The bureau of information can, through proper publicity, keep in touch with large or small farmers and producers, placing at their service economic cooperative methods which would enable them to affiliate with one another and various agricultural societies for mutual benefit, become their own handlers, thus cut out the middleman and reap all profits, however small, themselves.

"Daily market bulletins posted throughout the markets will give fullest publicity as to the prices, quality and quantity of food products received and sold at the various terminals."

Municipal Ownership of Public Utilities in Germany*



With Some Predictions as to the Future Opportunities for Municipal Engineers in America



By Edward M. Bassett

THE progress of modern Germany since the Franco-Prussian war, especially in city planning and administration, has been wonderful. We are accustomed to think that the great cities of the United States have during the past thirty years grown faster than those of any other country. On the contrary, German cities have increased faster than our own. To-day there is practically no migration of city population from Germany. The following table was prepared by Nelson P. Lewis, chief engineer of the Board of Estimate and Apportionment of New York City, who selected these cities at random simply because they had about the same population in 1880, and because they were believed to be typical. The increase by decades is shown in the table:

On a similar trip made by me last summer, I was in nearly every case informed by city engineers and other officials that all of their public utilities were self-supporting. As a rule the city does not try to make a profit out of the public utility, but when it has attained a self-support with proper provision for depreciation, the charges to consumers are reduced. This is, of course, as it ought to be, because the users of one public utility should not be compelled to contribute a profit that may lessen legitimate burdens that other sections of the population should bear.

In my opinion, it can now be said that municipal ownership and operation in Germany are in the main successful. There are some critics, however, mainly among the bankers, who say that there seems to

| Population, 1880 | Population, 1890 | Per Cent Increase in 10 Years | Population, 1900 | Per Cent Increase in 20 Years | Population, 1910 | Per Cent Increase in 30 Years |
|------------------------|---------------------|-------------------------------------|---------------------|-------------------------------------|---------------------|-------------------------------------|
| Cincinnati ... 255,139 | 296,309 | 16.1 | 325,902 | 27.7 | 364,463 | 42.8 |
| Breslau 272,900 | 335,200 | 22.8 | 422,728 | 54.9 | 510,929 | 87.0 |
| Buffalo 155,000 | 255,664 | 65.0 | 352,387 | 127.1 | 423,715 | 173.4 |
| Cologne 144,800 | 281,800 | 94.6 | 372,229 | 157.0 | 513,491 | 254.6 |
| New Orleans.. 216,000 | 242,039 | 12.0 | 287,104 | 32.8 | 339,075 | 56.9 |
| Dresden 220,800 | 276,500 | 25.2 | 395,394 | 79.0 | 546,822 | 147.1 |
| Louisville ... 123,758 | 161,005 | 31.0 | 204,731 | 65.4 | 223,929 | 80.9 |
| Hanover 122,800 | 163,600 | 33.2 | 235,666 | 91.0 | 302,384 | 146.2 |
| Providence ... 104,850 | 132,099 | 26.0 | 175,597 | 67.5 | 224,326 | 113.9 |
| Nuremberg ... 99,519 | 142,523 | 43.2 | 261,022 | 162.3 | 332,539 | 234.1 |
| Rochester 89,366 | 133,896 | 49.8 | 162,608 | 82.0 | 218,149 | 144.1 |
| Chemnitz 85,000 | 138,955 | 63.5 | 206,584 | 143.0 | 286,455 | 237.1 |

On an inquiry trip made by me in 1908 through the large cities of Germany, the ownership and operation of water, gas and electric supply, and of the street-surface railroads, were to an extent of four-fifths (approximately) in the hands of the municipalities, but quite a good many of them were not self-sustaining. Practically all of the city water supply systems, about half of the gas and electricity systems, and less than half of the street railroads, were self-sustaining.

be no end of money obligations that cities are willing to undertake, and who claim that on the whole the expense of operation is greater than with privately owned utilities. Officials claim, however, there are so many ways that public ownership is advantageous to the people that they would not think of going back to private ownership—although they are inclined to admit that, in respect to thrift and prompt adoption of new methods, private ownership has some advantage. When, however, it comes to harmonious adaptation of all the utilities to modern city planning, it is claimed that the advantage of public owner-

* From a paper read before the Eastern New York Section of the National Electric Light Association at Schenectady, N. Y., January 20, 1913.

ship is enormous. Street-surface and rapid transit lines can be inter-related. Bridges and viaducts can be linked with transportation lines without defacement. All the utilities can be used to contribute toward convenience and good appearance. Street surfaces are broken up less often, and when broken up all sorts of work can be attended to before repavement.

Relation of Municipal Ownership to City Planning

Berlin shows many instances of fine adaptation of public utilities to city planning or street lay-out. I will instance one of them: The suburban municipality of Schöneberg lying within greater Berlin has recently completed a city-owned subway. At the present location of the Stadtpark Station was a swampy depression, about fifteen acres in extent, across which passed the subway route. Instead of filling in the depression, a handsome concrete viaduct was constructed, on the upper level of which is the roadway, and underneath, as part of the viaduct, is built the station, the floor of which is at the bottom of the depression, or fen. Daylight comes into the station freely on both sides, for the city has transformed one part of the low ground into a small depressed park with a lake, into which the windows of the station on one side look, and another part into a depressed public playground into which the windows of the other side of the station look. Thus the city has created a harmonious development of roadway, viaduct, subway station, small park and playground.

About seven years ago Berlin permitted a company to build and operate an east and west electric rapid transit line partly underground and partly overhead. It is called the Hoch-und-Untergrund-Bahn. The next step was for the separate municipalities of Schöneberg and Wilmersdorf to build spurs into their localities with city money, but they granted leases for operation to the Hoch-und-Untergrund Company. Now Berlin has begun the construction of a north and south subway with city money, which is to be municipally operated. Thus we see in Berlin within a space of ten years (1) company construction and operation, (2) city construction and company operation and (3) city construction and operation.

Ten years ago there was a great deal of complaint in Berlin because the Prussian

state railroads were earning so poorly that the terminals and trunk line entrances into Berlin could not be kept up to date and the Ringbahn could not be electrified. Now the tables have turned. The state is preparing to electrify the Ringbahn and Stadtbahn, is carrying on extensive grade crossing elimination work, and Berliners complain because the government expends so large a portion of its surplus railroad earning in Poland and out-of-the-way localities instead of in Berlin. It is only right to say that there is general complaint of freight rates in Prussia and throughout Germany.

The city of Ulm in Southern Germany, on the headwaters of the Danube, is a remarkable illustration of a municipality doing the people's work. It is a very old city—population about 60,000—and has the most monumental cathedral in Germany, if one takes size, age and beauty into account. This city owns all of its public utilities, and they are all self-supporting. In addition, it has undertaken a land and building policy in an effort to prevent speculation in land and buildings and to absorb the unearned increment of land for the benefit of the city. Eleven years ago the city purchased from the state government the broad belt surrounding the city, on which the defensive ramparts had stood. There seemed to be no way of financing this large purchase except to sell off part of it for buildings, and in order to obtain the increment that would come to the outside land because of the tearing down of the ramparts and improvement of the land, the city bought large amounts of additional outlying land. The result has been that the city has sold more than enough land to recoup itself for the entire cost, and it still owns more than two-thirds of the area of the city. The city erects model houses for workmen and for its school teachers, selling them on partial payments, i. e., 3 per cent per annum for interest and 2 per cent per annum for amortization, with provisos that sales shall only take place subject to the power of the city to buy at cost plus a slight interest rate. The effect of this policy has been to bring about very low rents, sanitary housing for working people, and the decreasing of taxation to almost a nominal burden.

We must remember that the German cities have had a large measure of home rule for centuries. The German states have no written constitutions, and, although

the state and empire have a certain supervisory power that makes for permanence and stability of city government, the city is left free to go into business just about as fully as an individual. The population is homogeneous and particularly obedient to local ordinances. Corruption among city officials is almost unknown. In Ulm I was told that most of the land purchases were made by officials privately before the public transfer to the city, but in no case had there been suspicion of dishonesty. Property ownership is represented in the city vote by having a larger count than the purely personal suffrage. Officials of all sorts have trained themselves for their particular duties, and popular opinion demands their retention for long periods. The mayor who has made a success in a small city will be called to be mayor of a large city.

An Ability Gradually Acquired

The whole subject of municipal ownership and operation is related to the ability of a municipality to carry on profitably various lines of business. This ability comes gradually and not all at once. No greater mistake can be made by a community that is unable to keep competent and honest officials in office for considerable periods of time than to embark in widespread municipal business. In the state of New York, although we have seen an increased ability on the part of our cities during the past thirty years accompanied by an increased willingness to undertake municipal operation, yet we are still far from the point where these activities can be undertaken with entire confidence and safety. Owners of large properties in our state depend more on the state constitution for the preservation of their property rights than they do on acts of the legislature or on the wisdom of public officials. The diversified make-up of the electorate with diverse notions of city government constitutes a condition that we must make the best of. Our public school system and the undoubted insistence of all of the people on steady improvement will in the long run work out most, if not all, of these problems.

I believe that the more exact methods of accounting, reporting and appraisal that have been studied and to some extent perfected by company officials in conjunction with public officials have during the past

five years brought about a more sympathetic attitude one toward another than formerly existed. State and city officials realize that duplication of plants is in the long run wasteful, and sooner or later must be paid for in whole or part by the public. Public officials better appreciate that all income is not profit, that depreciation replacements and interest on actual investment consume a large part of income. Company officials realize more and more that success in public utilities comes from close partnership with consumers, increase of efficiency, and lessening of rate in order to increase consumption.

This spirit of coöperation and recognition of one another's rights will, in my opinion, increase; and when the time comes that the public more frequently desires to take over the ownership, or the ownership and operation, of public utilities, it will be done, not in the meat-ax method that prevailed ten or twenty years ago, not by municipal duplication of waterworks and gas and electricity plants, but by acquiring them by purchase or condemnation, and using them as a nucleus for more ample municipal systems.

With the gradual progress toward general recognition that in so far as a public utility is a natural monopoly, it is properly regulated by the state; and with the gradual growth of city ownership (in the case of some utilities doubtless a long wait), there will be a decrease of opportunity to make fortunes out of franchises, and a corresponding increase of opportunity for many to obtain the reward in money and honor that properly comes from thrifty administration and invention of methods and machinery for lessening the cost and increasing the value of the service. From this point of view it is apparent that the field for municipal engineers and public service experts will grow larger and even more honorable and useful. The practice of a profession is not primarily for money-making. The so-called learned professions often lose sight of this. Municipal engineers will, in my opinion, more and more realize that part of their reward for services well performed will be the esteem of all good citizens, because they have faithfully made a real contribution to the life and happiness of their fellow men.

WHAT TO DO AND HOW TO DO IT

Four Articles in This Series Already Published:

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Nelson P. Lewis, Chief Engineer, Board of Estimate and Apportionment, New York.

How to Aid the Cause of Public Recreation

By H. S. Braucher

Secretary, Playground and Recreation Association of America

SEVERAL leading citizens of Exville became interested in stories they were hearing of play centers in some of the larger cities. "If New York and Boston each spend more than a million dollars a year for recreation and consider it a wise investment—we ought to look into it," they said.

"What shall we do first?" was the question. Some advocated buying land for children's playgrounds. Others wanted to use the schoolhouses and grounds as play centers. A few suggested that buildings be erected in the parks and the parks be made play centers. At last it was decided that a committee should learn just what activities were usually carried on in different communities in the play centers, so that they could decide wisely what to do.

Activities Carried on by Recreation Secretaries

It was found that many cities employ a special man (or woman) to give his entire time to recreation, just as they have a superintendent of schools giving his time to education. The public-spirited citizens of Exville were a little overpowered when they looked over the statement of work being done in various cities by recreation secretaries. Here it is:

Organization and executive management of outdoor playground system; selection and training of play leaders; selection, purchase

and installation of equipment; planning of buildings and alteration of buildings for recreation purposes

Responsibility for evening recreation centers

Responsibility for children's gardens

Responsibility for conducting athletic badge tests for both boys and girls throughout the city

Arrangements for the celebration of holidays

Arrangements for pageants

Cooperation in the promotion of Boy Scouts' activities

Cooperation in the promotion of Camp Fire Girls' activities

Arrangements for summer camps

Provision for band concerts and other municipal music

Responsibility for encouraging wholesome home recreation, arranging that games be taught which can be played at home, providing places where parents and children take recreation together

Studying recreation conditions in different sections of the city, to attempt to meet any special conditions found

Studying private recreation agencies to find recreation furnished and number reached, to avoid duplication and to find possible ways of assisting by furnishing places for games and meetings

Supervision of commercial recreation

Promotion of play away from playgrounds

Arrangements for ice skating in winter, if necessary through flooding of vacant lots

Arranging coasting places, if necessary by having certain streets set aside and properly guarded

Placing recreation workers in actual contact with homes of the neighborhood

Promotion of school athletics, of school baseball, basket ball, volley ball leagues and of



FIELD HOUSE AND WADING POOL, SOUTH PARK, CHICAGO



FIELD HOUSE AND ATHLETIC GROUNDS WOOD ISLAND PARK, EAST BOSTON, MASS.



SAND MODELING

A popular occupation on the playgrounds of Brookline, Mass.

all recreation activities for school boys and girls outside of regular school hours

Arrangements for tramping trips

Interpreting to the public, through addresses and through the public press, the recreation work which is going on in the city

Coöperation with other agencies, such as the juvenile court, settlements, libraries, churches and various social organizations

A Recreation Secretary Needed

The Exville people realized they could not provide for all these recreation activities at once. They knew that some of the work done in other communities by a special recreation secretary in their city must, at least for quite a time to come, be done in a smaller way by some existing departments. They were, however, convinced of one thing—there is more recreation work in one community than one man can possibly do. "We must have the ablest possible trained person to start the work," they decided.

Convinced in their own minds as to the first step—that it was not land nor buildings but a man—they set out to convince others. They told their friends that in all the cities where rapid progress had been made in providing opportunities for wholesome play for all their citizens, old and young, a recreation secretary was employed throughout the year to give his entire time to the problem of municipal recreation; that even in a village like Bennington, Vt., with a population of 6,211, such a secretary was employed; that in some farming districts a man is giving his time to making available for all the right kind of opportunities for coming together for good times and for social intercourse; that within a few years 63 cities had established 655 full time positions.

The Campaign

As the men and women in Exville talked with their friends they pointed out that in numbers reached, homes influenced, importance of influence, the work of a recreation system headed by a recreation secretary is not less difficult than that of a school system headed by a school superintendent. At first some doubted the statement that every city big enough to have a school superintendent exclusively for its own schools has much more recreation work that a recreation secretary can care for; but as the doubters thought over the problem, which was, after all, pretty new to them, and as they watched life about them,

they became convinced, and helped in the work of convincing others, that it was a wise economy to begin by employing a trained man as recreation secretary.

Though a large number of leaders were now in perfect agreement, the city government hesitated. The committee of the city government desired more facts—facts from other cities—facts also regarding their own city. The public-spirited volunteers who had carried the campaign thus far had seen something of conditions in other cities, but they did not know just how to gather quickly such essential facts as would throw most light on local needs. So they wrote to an organization with its offices a thousand miles away—The Playground and Recreation Association of America, 1 Madison Avenue, New York—and asked advice as to what they should do. The local group were so earnest that at the earliest possible moment—about six weeks later—a field secretary familiar with the facts about the recreation activities all over the United States and Canada arrived to help the local group by placing all his knowledge at their disposal. It was understood that he should remain until he had carried the campaign through.

A Visit from a Field Secretary

He studied the local situation in the light of the experiments which had been tried in some hundreds of cities, interpreting the reasons for the various successes and failures, showing the results which have followed playground and recreation center work in other cities. Of most value, perhaps, was the study of local conditions bringing out clearly the definite concrete facts which all knew to exist but did not know quite how to secure. The district attorney and the judge of the juvenile court had been seen before, but they had not made available to the Exville leaders the exact statements, the concrete personal stories of instance after instance where boys and girls had had serious difficulty because they had no opportunity to play. Besides the figures secured from the Associated Charities, stories were obtained of specific families where the need for financial aid might have been avoided had the breadwinners who had worked hour after hour, day after day, year after year, in monotonous factory work, had a chance to play in their leisure hours. Life had



GYMNASTICS IN TOMPKINS PARK, NEW YORK CITY



SWING MERRY-GO-ROUND AT CURTIS PLAYGROUND, DENVER

ceased to be vital, their spirit had been taken away, efficiency had disappeared, because there was no adequate provision for wholesome pleasure.

The Appropriation

The field secretary helped the local group to bring together such facts, local and general, as would answer the questions which come to every committee of the city government. The local leaders presented the facts to the committee, the committee cross-questioned the field secretary, convinced themselves and voted the money for starting the recreation system on the right basis with a recreation secretary. There had been no question that the Exville city government would appropriate the money,—public sentiment was so strong for play centers,—the aim had been to prevent the work's being started in such a way as to do more harm than good. Perhaps it ought to be said that each member of the city government had found out that many of his strongest constituents were sufficiently interested in seeing a wise recreation plan to run in to see him, or to telephone, or to write to him. One member of the city government had his telephone disconnected, so many of his constituents were interested. No doubt when you have a good cause it helps the members of the city government

to hear from many minds—if there are good reasons to be given.

Securing a Recreation Secretary

Of course after Exville had its appropriation for a recreation secretary, several local men tried hard to secure the position. Two of these local men would have been desirable men if they could have had a year in some other city with an experienced worker. At the request of the Recreation Commission which Exville had now appointed, the field secretary coöperated in securing information about some six trained workers who seemed available. One was finally chosen by the Recreation Commission. He is still working in Exville. The development of the work has been gradual. Much remains to be done. Exville has asked that the field secretary come back to advise them as to the progress being made, and the field secretary is soon to go. However, Exville already has a fair recreation system. The leading citizens planned wisely, because they had all the facts. They have a larger number of centers than they could have had without a trained recreation secretary to start the work. A larger number of men, women and children have lived and are living happier and more useful lives.

How to Judge Garden Contests

By J. H. Prost

Superintendent of Parks and City Forester, Chicago

INTEREST in gardening leads to civic progress. Garden contests stimulate an interest in garden-making, and disseminate a knowledge of plants and how best to arrange them for ornamental effects. They inspire the contestants with a determination to do something original in their gardens. If we are to have a beautiful city, we must encourage every citizen to coöperate and do all he can to beautify whatever space he has available around his house.

In large cities each improvement association or neighborhood club should have an annual garden contest in its district, give prizes for the best developed and best kept garden, the finest vegetables and most

beautiful flowers grown by the contestants, and then enter these local prize winners in a contest to be conducted by the League of Improvement Associations, an organization comprising all of the local associations. This final contest would bring out the best gardens in the city, and by awarding the prizes at some suitable time and place, with each local association participating, an educational program could be arranged. Prominent speakers could be called upon to tell what should be known about gardening and civic beautification.

These local contests might be considered missionary work in home garden-making and civic betterment. They should be judged by persons who have some knowl-

edge of ornamental horticulture and who do not live in the community.

The judging should be done along definite lines. In attempting to classify these gardens they may be referred to as:

- 1.—Back yard gardens.
 - (a) Ornamental.
 - (b) Vegetables.
 - (c) Combination of vegetable and ornamental.
- 2.—Front yard.
 - (a) Individual development, but conforming in general with neighbors' yards.
- 3.—Vacant lot gardens.
 - (a) By individual; vegetable or ornamental.
 - (b) By groups of people; vegetable or ornamental.
- 4.—Children's gardens.
 - (a) At home.
 - (b) On school ground.
 - (c) On vacant lot. By individual child or group of children.
- 5.—Factory gardens.
 - (a) Taken care of by professional.
 - (b) Taken care of by employes.
- 6.—Porch gardens.
- 7.—Window boxes.

The points to be covered in judging a back-yard garden are the general arrangement of the planting in conformity with the area available. The density, choice, symmetry and harmony of the plants are factors to be considered. These back-yard gardens may be entirely ornamental, which type is undoubtedly the most desirable in the residence sections; or they may be entirely given up to vegetable-growing, thus bringing the largest financial return. Then, again, the back-yard gardens may be a combination of the ornamental and vegetable, which undoubtedly is the best suited for the average city home.

The front-yard gardens should be given points of credit, depending upon how well they are planted to conform with the general treatment along the street. Unsightly and vine-covered fences or clipped hedges planted on the property line to divide the neighbor's yard are an expression of poor and selfish taste; such planting destroys the continuous street effect, looks unneighborly and makes one think the owners feared their yard would be stolen. With all the front lawns along the street opened

into one another a harmonious treatment is obtained that gives the street a boulevard appearance.

I have often seen pleasing effects as the result of planting castor beans against the house or porch, with caladiums, cannas, coleus or geraniums in front of them; but best results are obtained by planting such shrubs as lilacs, mock oranges, highbush cranberries, altheas, spirals, ninebark and Van Houtten against the house and porch corners, with lower growing shrubs, such as weigelas, Japan quince, California privet, snowberries, Indian currants, thunberg barberries, deutzias, gracilles, and lemoined or spirals, Anthony worterer, tomentosa and bumelda planted in front of the high-growing ones, forming a bank of foliage rising from the lawn up and against the house.

The shrubbery effects are permanent in character and are almost as interesting when the twigs are covered with snow as when in bloom.

The vacant lot gardens would be divided into those developed and taken care of by the individual and those planted by groups of individuals. The points to be considered are practically the same as in the home yard gardens.

Children's gardens would be classified into those developed by the individual child at home, by an entire school or on a vacant lot by a club of children. The points to be considered would be choice of varieties, arrangement of plants, cleanliness, lack of weeds, health of plants, thinning out of plants, etc.

Factory gardens have a tremendous influence upon civic beautification. Where the employes constantly have plants and a garden under their observation, they can't help being inspired with the desire to have a garden at home. And factory managers should be given due credit wherever they build gardens around their factories for the enjoyment and education of their employes and the people living in these communities.

The window boxes and porch gardens should be judged as to the arrangement of the plants, color effect and the selection of the varieties.



The Representative Council Plan of City Government

The City Manager Plan Improved by the Application of Proportional Representation to the Election of the Council

By C. G. Hoag

Secretary for the United States of the American Proportional Representation League, Haverford, Pa.

REPRESENTATIVE Council Plan seems a suitable name to give to the improved form of City Manager Plan which I shall explain and defend in this article.

The Manager Plan itself, as proposed by the Board of Trade of Lockport, N. Y., and adopted by Sumter, S. C., and Staunton, Va., is now understood pretty well by most students of municipal progress. It may be explained by saying that it differs from the Commission Plan only in providing that the commissioners should delegate the actual work of administration to a chief administrator or manager instead of doing that work themselves. This difference may at first seem slight, but it will be found to be important. The delegation of administrative work by the commissioners will make the city government more efficient and at the same time more democratic.

For the highest efficiency we must put the chief administrative positions on a professional basis. That means selecting applicants and retaining incumbents solely on grounds of merit in respect to the administrative work required. And that is pretty effectively prevented by the Commission Plan and pretty well insured by the Manager Plan. Under the former the chief administrators, who are the commissioners themselves, must in many cases be chosen by the voters as representatives of certain policies or interests rather than as the men best qualified by training and experience for administrative posts. Moreover, in large communities the voters are not in a position to judge of the relative qualifications of candidates for administrative posts requiring technical training. I do not say they are "not to be trusted" to judge: I say they are "not in a position" to do so. You did not want a vote as to who should be chief engineer of the Panama Canal. Why? Not because you could not have trusted yourself to make such a choice if

you could have spent a few weeks inquiring into the qualifications of candidates, but because you were not *in a position* to make such an investigation, and because all the other voters of the country, who would have had the right to vote for the engineer if you had had it yourself, would have been in the same box. You know that the way to get efficiency in such an official is to entrust his selection and his retention to some man or body of men whom you can fairly hold responsible for putting him on the professional basis that you and the other voters are not in a position to put him on by direct action at the polls. Now the principle you recognize so clearly as applying to the chief engineer of the Canal applies also to the head of the purely administrative side of a city government: to get the highest efficiency in such an official, delegate his selection and his retention to a small body such as the commission, which is in a position to investigate the qualifications of applicants thoroughly and to watch the work of an incumbent closely; require every member of the commission to affirm, on taking office, that in the selection or retention of a manager he will be guided by nothing but considerations of fitness for the work of the office; and, finally, hold the commission strictly responsible for the manager's efficiency.

I have said that the Manager Plan is also more democratic than the Commission Plan. Democracy is not the semblance but the substance of rule by the people. If, therefore, voting directly for administrative officials thwarts the people's will instead of making it effective, as in large communities it certainly does, then voting directly for such officials is not real democracy at all but sham democracy. Perhaps it occurs to you at this point that the mayor under the old-fashioned type of charter is called an executive or administrative official, and that to delegate his selection to any commission

or council would seem to you unsatisfactory. Very likely, but remember that the mayor under the old-fashioned type of government is far from being a purely administrative official. Strip him of all his legislative power, make him entirely subservient to the council, require the council to put him on a professional basis, and he is no longer the mayor of the old regime at all, whom you would want to elect at the polls, but a mere administrator whom you would be glad to have the commission or council select and retain in office in accordance with the pledge made by each commissioner on taking office.

So much for the advantages of the Manager Plan over the Commission Plan. Now what are its advantages, if any, over the Federal Plan, that is, the plan under which the heads of departments are appointed by the mayor, who in turn is directly elected at the polls? There is at least one such advantage: the mayor's duties are largely administrative; and in so far as they are administrative, they should be in the hands of a trained and experienced administrator on the professional basis to be secured only by leaving his selection and retention to a body of representatives like the council.

Up to this point I have tried to show briefly the superiority of the Manager Plan over either the Commission or the Federal Plan in respect to one of the fundamental requisites of government, efficiency of administration. I want to show now that in respect to the other such requisite, namely suitability for the determination of policies with the highest wisdom consistent with perfect democracy, the Manager Plan as proposed by Lockport or as adopted by Sumter or Staunton requires a certain improvement.

The Lockport Manager Plan follows the Commission Plan in providing that the commission shall be elected at large by the "block vote," that is, by ballots on which each voter marks as many names as there are commissioners to be elected. Since the candidates have been reduced at a preliminary election, as in Iowa, to twice the number to be elected, this plan means that every commissioner is elected by a majority of all the voters of the city, but it means also that *all* the commissioners may be elected by the same bare majority. Such a plan, though perfectly suitable for the election of a com-

mittee having only executive duties, is obviously ill-adapted to the election of a body that is to act in a deliberative capacity in the name of the whole city. For in a deliberative body the prime requisite is true representation of all the voters. Applied to the election of the commissioners, then, under either the Commission or the Manager Plan, the block vote means depriving the city of the services of a body fit to deliberate in the name of all the people. This is not saying, of course, that a commission elected by the block vote may not give "good government," or that it may not give a courteous hearing to minorities unrepresented in its membership: it is saying merely that such a commission is not a representative body at all in any reasonable sense of the word representative.

Under the Commission Plan, of course, the block vote for the election of the commissioners cannot wisely be given up in favor of some kind of voting that will make the body truly representative, because under the Commission Plan the administrative functions of the commissioners are more important than their deliberative functions, and to make five *administrative* officials representative of the various interests and opinions of the community would be an absurdity. Under the Manager Plan, however, there is no objection to making the commission reflect the community's various interests and opinions truly, and there are great advantages in doing so. The same thing may be said in respect to the Federal Plan. That plan seems to me inferior, as I have said, to the Manager Plan; but if it is to be retained at all, there is no reason why it should not be improved by the election of the council by the method I advocate in this article especially for the Manager Plan.

How, then, can a council be so elected that it will be truly representative of all the voters? The answer, given to us by the experience of many countries, is by "proportional representation," or, as it ought rather to be called, the *unanimous constituency system of representation*.

A Comparison with the Ward System

To understand the unanimous constituency system we shall do well to compare it briefly with the district or ward system. Under the ward system the city is divided arbitrarily, before the election, into as

many geographical parts called wards as there are members of the council to be elected. The theory on which this is done is obvious: it is argued that if the whole city is to elect, let us say, seven councilmen, any geographical seventh of the city should be allowed to elect one. This principle is by no means all wrong, as I shall point out in a moment, and yet the ward system does result, as long experience has amply shown, in the gravest sort of misrepresentation. The reason is evident. In any ward a large number of voters vote against the man who is elected as the member for that ward. These voters, therefore, are certainly not truly represented by that member. Moreover, a considerable number of the voters who vote for the member elected in the final election vote against him in the primaries. These latter voters also cannot be said to be quite truly represented by their ward's member.

And yet the principle on which the ward system is founded—the principle that if the whole city is to elect seven members, a seventh of it should be allowed to elect one—is obviously right. Where, then, does the error of the ward system come in? It comes in when we say that the seventh of the city that is to be allowed to elect one councilman must be a *geographical* seventh. If we make the constituency of each of the seven members not a geographical seventh but *one of the seven largest groups of voters of the city who can unite, under the actual circumstances, in supporting any candidate*, we preserve the true principle that is the basis of the ward plan and at the same time eliminate the cause of all the misrepresentation under that plan. That cause is the forcing of all the voters of a ward, no matter how much they differ in opinions or interests, to be represented by a single person simply because they happen to live inside of an arbitrary geographical line. It is not removed, it should be noted, by the adoption of any preferential voting system designed to insure election by majorities instead of pluralities. It is removed only by allowing every voter of the city to associate himself freely with others anywhere in the city, and allowing any group of voters that turns out to be one of the seven largest that are unanimous in the support of a candidate to put its man into the council.

It will be noticed that this system makes the constituency of each member of the

council approximately the same in size as one whole ward of the city and that under it the voter votes for but one member of the council, just as under the ward system. But there is one big difference between the two systems: whereas under the ward system a candidate gets a seat in the council because he is wanted by a bare plurality—or, if you provide for majority preferential voting, by a bare majority—of the voters of the seventh of the city which we call the ward, under the unanimous constituency or proportional system no candidate gets a seat in the council unless he is the unanimous choice, under the circumstances, of approximately a full seventh of the voters of the city. The error eliminated thus will be found to be responsible for many of the gravest evils in our politics.

You will ask by what means the voters of the whole city can thus group themselves into seven such unanimous constituencies. By a special but simple form of ballot, with suitable provisions for counting it. There are several of these systems, known as systems of proportional representation. The name is not fortunate: it implies that these systems do no more than apportion the seats fairly between political parties, according to the strength of each, whereas in fact the best of the systems go far beyond that. The best one of all makes the voter free to disregard all party lines or other lines *if he wants to*, without danger of "throwing away his vote," and indeed puts him for the first time in a position of full mastery.

Some unanimous constituency or proportional system of representation is successfully in use for the election of the Parliaments of Belgium, Sweden, Denmark (Upper House), Finland, Japan (Lower House), Württemberg (certain members of the Lower House), Union of South Africa (Upper House), and Tasmania; for the election of the Councils of half the Cantons of Switzerland; and for municipal or other elections in Denmark, Switzerland, and Bavaria. Proportional representation is now the chief issue in French politics, and a bill providing for its application to French Parliamentary elections has already passed the Chamber of Deputies. The best system, the very one I advocate for the election of our city councils has recently been incorporated in the Parliament of Ireland Bill for the election of both the Senate and the House proposed for that country, has re-

cently been recommended for Western Australia by the Chief Electoral Officer there after an official investigation, and is backed for New Zealand by the Ministry of that colony.

The best of the proportional systems, without question, is that one which gives the individual voter the greatest freedom in the expression of his will on the ballot without fear of "throwing his vote away," in other words that one which is most effective in insuring to each voter's real will neither more nor less than its just weight in the make-up of the council. The system that answers to this description is the Hare system, the one used in Tasmania and South Africa and likely to be adopted for Ireland, Western Australia, and New Zealand. Another name for it is "the single transferable vote."

The Single Transferable Vote

Under the Hare system no primary elections are necessary. Candidates are nominated by petition. The names of candidates are printed on the ballot in alphabetical order or in any other order that may be preferred. The "Instructions to Voters" read as follows:

"Put the figure 1 opposite the name of your first choice for the Council. If you want to express also second, third, and other preferences, do so by putting the figure 2 opposite the name of your second choice, the figure 3 opposite the name of your third choice, and so on. You may express thus as many preferences as you please. *A ballot is spoilt if the figure 1 is put opposite more than one name.*"

The ballots are counted at the precincts according to first choices. They are then sent to the central election officials or board, under whose direction all of the first-choice ballots for each candidate are put together, the total number for each candidate footed up, the total number cast for all candidates footed up, and the other provisions for the completion of the count carried out. The next step after these is to determine whether any candidates have received enough first-choice votes to be declared elected. How many must that be? To answer this question we have simply to go back to the principle that is at the basis of the whole system, that any candidate has a right to a seat in the council who is supported unanimously by one of the seven largest groups of voters of the whole city who can unite in supporting a candidate.

How many first choice votes, then, are enough to elect? Well, if seven councilmen are to be elected, enough for a constituency must be barely more than an eighth of all the ballots cast at the election. Why? Because a number that is barely more than an eighth of all cast is sure to be one of the seven largest numbers into which the whole number can be divided up. To put it more concretely, if Smith has 601 votes and the whole number cast is 4,800, no more than six other candidates can possibly get as many votes as Smith. Any candidates, then, who on this principle have received enough first-choice votes to make up a constituency are at once declared elected.

Effective Voting

If it is found that a candidate has more first-choice votes than the number required for a constituency, his surplus ballots are distributed to other candidates according to the preferences of the voters who cast them as indicated on them. The object of this transferring of surplus first-choice ballots is not hard to see: it is to make every ballot that counted for nothing towards the election of the voter's first choice effective toward the election of his next highest preference whom it can really help. The figure 1 on a ballot, you see, means: "This is the man I want to help elect if possible." The figure 2 means: "This is the man I want to help elect if I cannot help my first choice." The figure 3 means: "This is the man I want to help elect if I cannot help either my first choice or my second." And so on: the figures on the ballot are simply orders given by the voter to the election official so that the latter can make the ballot effective towards the election of that candidate preferred by the voter among those who, considering how everybody else in the city is voting, can possibly be helped by it.

After transferring thus the surplus votes of candidates who have received a surplus on the count of first choices, the election officials proceed in like manner to transfer the ballots of the candidate now at the bottom of the poll so as to make those ballots also effective; for they may reasonably be assumed to be wholly ineffective until thus transferred. (Of course the rules provide for passing by, in this transferring, any candidate who is already elected or already eliminated.) In this way the weakest candidates are eliminated one

by one, in order of weakness, until the seven constituencies are built up. And when built up thus, each constituency may fairly be said to be one of the seven largest groups of voters who can unite, under the actual circumstances of that particular election, in the support of candidates. It is fair to say, therefore, of the single transferable vote system, that it substitutes for the ward system, under which a seventh of the council is elected by only a part of the voters of the seventh of the city called a ward, a system under which no candidate is elected who is not the free choice of a unanimous group that is approximately a seventh of the whole city.

The far-reaching advantages of the Hare system of electing a city council or any other policy-determining or deliberative body cannot be fully appreciated at once. I will draw attention to a few of them.

Corruption

To elect a councilman corruptly under the ward system it is necessary to corrupt only the few voters necessary to turn the scale in a close ward. To elect one corruptly under the Hare system it is necessary to corrupt approximately a seventh of all the voters of the city.

Justice

The ward system may be very unjust, for under it the seats in the council are often won not by force of voting power but by the tricks of politics: experienced politicians can often make of no avail thousands of votes cast by their opponents simply by pitting faction against faction in close wards and then swinging the small vote necessary to control each. It is only under a system by which each voter's ballot is insured its full weight of one when marked in accordance with the real will of the voter that we can expect the council to reflect the will of the voters truly. Under the ward system a small minority of the voters of the city may control a majority of the council. Under the Hare system a majority of the people is sure to elect a majority of the council, and yet at the same time every minority group that is large enough to deserve representation in the council gets it. People who do not understand proportional representation sometimes say they do not believe in it because they "believe in majority rule." The misconception that gives

rise to such statements is a natural one. It arises from confusing majority (or plurality) voting for the council with majority voting in the council. In fact, however, it is only by abandoning the ward system for proportional representation that we can be sure of having in the council either majority rule on the one hand or a fair representation of minorities on the other.

Continuity of Policy

Under the ward system the personnel of the council may be changed considerably by the change of a few voters in a few close wards. Under that system, therefore, there is no assurance that the complexion of the council will not change abruptly when there is no marked change of opinion on the part of the voters of the city generally. Under the Hare system each councilman is sure of his seat so long as he remains the candidate really preferred by one of the seven full constituencies of the city. If a councilman is not reelected, it is only because those who elected him formerly now really prefer some one else. The complexion of the council changes, in other words, only as fast as the interests and opinions of the community change or as fast as councilmen are found to be other than they were thought to be when formerly elected. The Hare system makes possible, therefore, that continuity of policy which is absolutely essential to consistent and orderly progress, and it insures the retention in the council of experienced leaders until leaders more truly representative of the community are discovered.

Political Apathy

Under the ward system political apathy is fostered in a ward where one party or faction is almost sure to win with many votes to spare. For in such a ward a voter of the leading party knows that his vote will probably have no effect on the result; and a voter of any other party knows in respect to his vote the same thing. A system which causes thousands of votes to be thus "thrown away" at every election is sure to breed apathy among large classes of voters. The cure for political apathy is not continual exhortation to "do your duty as a citizen and go to the polls," but *making each ballot count one towards the make-up of the council, even when the voter has dared to record on it his real will.*

Quality of Men Elected

The ward system puts into the council a man who can get the support of the largest group in a single ward. The Hare system puts into it no one who cannot get the support of one of the seven largest groups in the city.

Eight Objections Considered

Consider now briefly the objections sometimes offered to the Hare system by those who have not analyzed it thoroughly.

1.—*"Would it not permit any crank who could muster more than an eighth of the voters to his support to get a seat in the council?"*

Certainly it would. But that means neither more nor less than that it is fair. The implication of those who ask this question, namely that the system would fill the council with cranks, is absurd. Clearly the number of cranks in the council would correspond to the number of crank-supporters in the city. It is only in a city full of crank-supporters, therefore, that the council would be full of cranks. Moreover, the thing works both ways: besides insuring a seat to any candidate having the necessary support whom you might consider a crank or undesirable member, it would insure a seat there also to any person of exceptional intelligence, education, or equipment who could get the same support. Have you never wished, when confronted in the voting booth by an array of mediocre candidates on the ballot, that you were allowed to unite with enough other like-minded voters, whether in your ward or in any other, to send into the council at least one person supremely qualified for membership?

2.—*"Would not the Hare system divide the voters into solid factions and interests?"*

It would do just the opposite. The ward system has kept the voters divided into factions and parties meaningless in municipal elections. The Hare system would set the voter free to cross all factional lines, including national party lines, if he wanted to; but it would make him free also to vote according to any lines, whether those of the most temporary sort or those of national party divisions, which he wanted to follow at the particular election in question. It is the cramping restrictions of the present plan of electing representatives by plurality

(or majority) vote in single geographical constituencies that maintain parties and factions rigidly where they would disappear at once or change with kaleidoscopic frequency under a system that allowed the voters to form their groups freely by means of the ballots themselves each one of which would be insured full effectiveness under whatever circumstances of grouping might arise. Under the Hare system national party lines would not persist in city elections except in so far as the voters really wanted them to. We have no right to forbid a voter to vote in a municipal election on national party lines: what we have to do is simply to emancipate the voter, to make him free to vote as he wants to and to have his vote count one when he does so.

3.—*"Have not geographical districts a right to representation as such?"*

There is no question that people who live close together have many important interests in common. Any system of election, therefore, which made it impossible for a voter to give as much weight as he wanted to to the geographical proximity of a candidate would be unreasonable and unjust. Fortunately, however, the Hare system permits every voter to give just as much weight to the location of candidates as he wants to; but it permits him also, as the ward system does not, to give his vote to a candidate outside of his ward *if he prefers to*. In this respect the Hare system has every advantage possessed by the ward system together with some other advantages of fundamental importance besides.

4.—*"Is it not hard for uneducated voters to vote such a ballot?"*

It is not. On this point there is plenty of conclusive evidence in official documents. See the Blue Book of the British Government (designated "Miscellaneous No. 3, 1907") containing the testimony of the Agent General of Tasmania. See the official report of an investigation of the Hare system, as used in Tasmania and South Africa, by the Chief Electoral Officer of Western Australia. And see an official report made to the Transvaal Government on the use of the system in Johannesburg and Pretoria. There is no reason why there should be any difficulty in voting such a ballot. The difficulty we find in voting our present ballot arises from the fact that we have to compare the relative merits of several candidates for each of many offices

the qualifications for which we know little about and the candidates for which we are not in a position to compare. But in voting the Hare ballot—which is applied, it must be remembered, to the election of representative or deliberative officials only—you have nothing to do but to record your preference for the few candidates on the ballot whom you do want in an office the sole qualification for which is ability to represent you in a deliberative capacity. Once the Hare ballot is introduced for the election of representatives, I may add, it becomes clear that the heads of administrative departments should not be elected at the polls at all but should be selected by the representative body. The ultimate effect of adopting the Hare ballot, therefore, is likely to be the reduction of the voter's task at the polls—except when the initiative or the referendum is invoked—to the one act he can do most easily and most intelligently, the casting of a single vote, in preferential form, for a representative in a deliberative body which is in a position to make the will of the whole community really effective. The Representative Council Plan, based on the election of the council by the Hare ballot, is the logical goal of Short Ballot principles.

5.—*"Is not the counting of the votes under the Hare system too elaborate and long an affair?"*

The completion of the count at the central election office does require a considerable force of clerks, a competent chief official, and several hours' time. But the system gets rid of primaries altogether, and the expense and bother of primaries are far greater than those involved in transferring the ballots under the Hare system. As for the knowledge required by the chief official, that can be acquired in a few hours. As for the delay in the publication of the completed returns, which would amount to part of a day in small cities and to about two days in very large ones, that is certainly a small matter in comparison with the advantages of insuring the election of a council truly representative of the interests and opinions of the whole city. Think what it would mean to a city to have as its council the seven persons who in the opinion of the voters represent them more perfectly than any other seven available men could. A system of representation that focuses the

voters of the city into a council almost as perfectly as a lens focuses the rays of sunlight into a point is not to be lightly set aside simply because the people would have to wait a few extra hours for the full returns.

6.—*"Does not the system introduce an element of chance in connection with the selection of the particular ballots to be distributed as the surplus of a candidate who receives more than a quota or constituency on the count of first choices?"*

It is not fair to say it "introduces" an element of chance: it does indeed fail to eliminate *all*, but it eliminates nearly all the very large element of chance in the ward system or the "block vote." Under both those systems some votes are thrown away by hundreds or thousands, having no effect whatever on the make-up of the council, while a few others turn the scale in ward or city. Under the Hare system, on the other hand, the element of choice remaining is infinitesimal. In the first place, though the particular ballots in any candidate's pile of first choices unquestionably differ from each other, any batch of fifty or a hundred of them is extremely unlikely to differ materially from any other batch of the same size in the same pile. In the second place it must be remembered that the only voters to whom the trifling element of chance involved can possibly be considered unfair are those whose ballots are not transferred but left to make up the quota or constituency of the candidate having the surplus. But *those voters have already elected their first choice*; and to call voters who have elected their first choice unfairly treated is to adopt a standard of fairness amusingly high in comparison with the standard of the present geographical constituency system. For under that system but a small percentage of the ballots can express the real will of the voters who cast them, and a large percentage of the ballots, as marked, have no more effect on the make-up of the council than the west wind.

7.—*"Does not the transferring of ballots at the central counting place offer opportunities for the substitution of manipulation for chance in the selection of the ballots that are to be regarded as a candidate's surplus?"*

It would certainly seem so on first thought, but the supposition is based on a

misconception of the real situation. The last rule for the counting of the ballots at the central office reads as follows:

"So far as may be consistent with good order and with convenience in the counting and transferring of the ballots, the public, representatives of the press, and, especially the candidates themselves shall be afforded every facility for being present and witnessing these operations."

Now imagine the actual situation at the moment when the manipulation supposed would have to take place. The ballots of the candidate having a surplus which is now to be distributed lie together in the form of a heap of packages of first-choice ballots, each of which packages was tied up and labeled at a precinct. Under these circumstances there is nothing for the counter to do but to set aside enough of these packages to make up nearly the quota or constituency required and to take the remaining ballots required from one of the remaining packages, the contents of which he cannot see until he unties the package and the needed ballots from which he must count off straight from one end of the package or the other if he is not to be seen carefully sorting them in order to try to have some infinitesimal effect on the election.

In actual practice, it is fair to say, the element of chance involved in the rules for the transferring of the ballots is of no importance, and the substitution of manipulation for chance is impossible. Finally, to put this objection out of court altogether, it may be added that by making the rules a little more elaborate and by increasing a little the work of transferring, the element of chance involved in the selection of the particular ballots to be transferred as surplus and the remote possibility of manipulation can both be quite eliminated. The thing is done simply by providing that, instead of transferring the right number of ballots as surplus and counting them as units, all the ballots received by the candidate having a surplus shall be transferred but shall be reckoned not as a unit each but as such fraction of a unit as is necessary to leave a constituency for the candidate for whom the ballots were originally cast and

to make the number of whole votes distributed equal to the surplus available for distribution. This point can scarcely be made clear in so brief a statement. I shall be glad to make it perfectly plain to anyone who thinks of applying it. Moreover, it is explained fully and authoritatively in John H. Humphreys' *Proportional Representation*,* which every commission or person seriously interested in this subject should read.

8.—"If it requires so much space to explain the Hare system to readers especially interested in charter reform, how is it going to be possible to explain it to the whole body of a city's voters?"

A system like this does not have to be explained abstractly and in detail to the whole body of voters. All that is necessary in the case of the voters generally is to show them that the system is fair, insuring justice to all parties or groups and effectiveness (if effectiveness be possible in the circumstances) to every man's ballot even when it expresses his real will, and to show them that the ballot is easy to vote. And all that can be done simply by holding an illustrative election with the people you want to persuade as voters, and by going through the process of counting and transferring the ballots before them. When such an audience is asked how many find that their first choice for the council has been elected, and nearly all raise their hands; and when the ballots that finally elect any candidate are analyzed to show that every one elected is the unanimous choice, under the circumstances actually existing, of one of the seven largest groups of voters of the entire city who can unite to support a candidate,—when, I say, this is done, nearly every person in the audience sees pretty clearly that the system is workable and fair. And a few persons in every such audience—the few who can think logically—see that such a system is the indispensable basis of the structure or mechanism of democracy, being necessary for combining excellence with democracy in the determination of policies, and efficiency with democracy in their execution.

* Published by Methuen & Company, London, 1911. Copies may be ordered of THE AMERICAN CITY.



SWIMMING POOL, JAMAICA PLAIN, MASS.
The water is constantly filtered

Sanitation of Swimming Pools

A Review of Literature, an Outline of Effective Methods and a
Plea for Legislation

By A. A. Moll, A. B.

Of the United States Bureau of Public Health

ONE of the necessary evils of civilization is the possibility, and even certainty, that some of the commodities required for human comfort may, when used promiscuously, result in the transmission of disease. Such have been found to be common drinking cups, roller towels and similar contrivances used in common by people.¹ The extension of public bathing facilities has recently served to attract attention to the need of observing rigid sanitary precautions, if it is desired to prevent the converting into focuses of infection of fixtures such as swimming pools and tanks intended for personal hygiene and comfort.

Swimming Pools Have Transmitted Disease

As early as 1892 Corlett² warned the public against the possible transmission of syphilis in public baths, while Mendizabal³ in 1895 blamed imperfectly cleansed public bath-tubs for the occurrence of one case of erysipelas, one of syphilis and two of scarlet fever, observed by him in his practice. Cobb⁴ describes a number of cases, selected out of a larger number treated by him for ethmoiditis and acute otitis media, which were caused by diving in a swimming tank;

² P. 92, Vol. XVIII, Am. P. H. Assn. Reps. and Papers.

³ P. 250, Vol. XXI, Am. P. H. Assn. Reps. and Papers.

⁴ P. 9, Bost. Med. and Surg. Jour., Vol. CLIX, 1908.

¹ Public Health Bulletin, No. 57.

Wilkinson⁵ reported three cases of either ear or nose disease contracted from bathing in polluted water, other participants in the discussion referring to similar cases observed by them; Breece,⁶ after investigating all the agencies which might have been responsible for an outbreak of typhoid fever at the Royal Marine Depot at Walmer, concluded that the accumulated facts went far to encourage the suspicion that the swimming bath had been chiefly responsible for the spread of the infection; the health commissioner of New York City is authority⁷ for the statement that a very well-marked epidemic of acute catarrhal conjunctivitis (pink eye) in 1903 was traceable to the public baths, but it seemed uncertain whether it had been transmitted through the water or from one person to another by means of towels; while Atkins⁸ mentions five outbreaks of disease following bathing in rivers or pools filled from rivers where sewage contamination existed, one being an epidemic of vulvovaginitis among 236 girls using a school swimming pool. During the last typhoid epidemic at Pittsburgh, when river bathing was forbidden, the opinion was expressed that the public bathing pools might have continued the dissemination of the disease; while frequent warnings have been given in the medical press⁹ against bathing in sewage-polluted waters, such as those in the neighborhood of New York Harbor and the New Jersey coast, it being but too apparent that, if typhoid germs are present, they can be readily taken into the system.

What Microscopical Examinations Show

That water in use at swimming pools becomes heavily laden with microorganisms has been proved by a series of observations conducted in various countries. Glynn,¹⁰ for instance, in his investigations of the Liverpool swimming baths, found a vast increase of germs in the water towards the close of the day, after a number of people had bathed. As the result of five observations made in "first-class" baths on separate

days, he ascertained that the number of bacteria per cubic centimeter in the water at night was 4,676; deducting 200 for those already present when the water was first introduced, and 400 for multiplication, about 4,000 bacteria per cubic centimeter remained, which had been introduced by 292 bathers. The water removed in about 10 minutes from the skin and hair of each bather approximately 4,000,000 germs. In the second-class baths, used mainly by small boys, each bather brought into the water 6,000,000,000 germs, mostly white staphylococci, although *B. coli* were found at the end of the day.

Hamburg Experiments

For a number of years since 1905, Fürth and Schwarz have been conducting detailed investigations in an effort to determine the increase in impurity caused by bathing in the water in swimming pools and tanks. During December and January¹¹ the fresh supply of water in one of the three baths under observation showed 57 germs per cubic centimeter, no *B. coli* or other pathogenic bacteria being discovered in 10 cubic centimeters at 99 degrees F. After 74 persons had bathed, a shower bath being used before their entering the tank, the germs had increased to 1,800 per cubic centimeter, and *B. coli* were found in 10 cubic centimeters at 99 degrees F. After 296 persons had bathed the number of germs was the same, but the number of those, including *B. coli*, growing at 99 degrees F. had increased. After 494 persons had bathed, the number of germs rose to 64,000, but the number of *B. coli* remained the same. At the end of the first day, after 820 persons had bathed, the number of germs was only 15,400, but the number of those growing at 99 degrees F. had increased. Traces of ammonia, which were absent when the water was first examined, were also found. The second day, after an initial increase to 37,600, the germs decreased to 6,500, although a considerable number of persons had bathed in the meantime. The surface layer of dirty water was then removed by overflowing the tank for one-half hour, fresh water being added at the same time through pulsometers to renew the supply. Following this, the number of germs rose again to 101,000, to fall down on the third

⁵ Proc. Roy. Soc. Med., Jan., 1912, abstracted, p. 444, U. S. Nav. Med. Bull., July, 1912.

⁶ P. 90, Rep. Med. Officer., L. G. B., 1908-9.

⁷ P. 12, Pub. Health Bull. No. 57.

⁸ P. 588, Survey, July 27, 1912.

⁹ Pp. 1039-48, Med. Rec., June 10, 1911, and p. 400, Am. Med., Aug., 1911.

¹⁰ P. 133, Vol. XV, Pediatrics, abstracted, p. 1029, J. A. M. A., Apr. 11, 1903.

¹¹ P. 260, Mun. Jour. and Eng., Feb. 22, 1911.



BATHING POOL IN PATTERSON PARK, BALTIMORE

day to 2,900. The deposit at the bottom of the tank, when analyzed, was found to be a grayish blue, finely-flaked mass, consisting of tiny fragments of iron, hair, small, dark-brown grains, microscopic wool and cotton threads, sand detritus and many protozoa. An investigation of the women's tank connected with the men's showed a similar deposit, but the number of germs was higher. Fourteen hours later, after 855 persons had bathed, the number of germs averaged 61,050 in the women's tank against 43,050 in the men's. During the night, the germs in the men's tank increased to 185,850 and in the women's to 160,500. After 959 men had bathed, during a second 14-hour period, the number of germs averaged 125,000, the number in the women's tank, after 381 bathers had used it, being 170,350.

English and American Investigations

Pearce,¹² in a similar investigation, found in the water among many harmless organisms others that were not so; while Forbes, in his more recent investigation¹³ of swimming pools connected with English institutions, isolated in water used for one day various intestinal organisms.

Recent work done in a number of Ameri-

can colleges, such as Purdue, Brown, Northwestern, Chicago, Pennsylvania and Wisconsin Universities and Brooklyn Polytechnic Institute, has served to confirm the above findings, the results as reported by Bunker,¹⁴ Whipple,^{14a} Lewis,¹⁵ Lyster,¹⁶ and Tully,¹⁷ coinciding largely with the observations made at Hamburg. These results indicate that germs do not increase in proportion to bathers, their numbers being subject to sudden increases and decreases, due to physical, chemical and biological processes, such as illustrated in the self-purification of rivers and in the working of septic tanks. From a chemical standpoint, little changes were observed in the water, although the oxygen consumed and the ammonia increased after a great many persons had bathed.

Methods in Use in Europe to Prevent Infection

All the observations having demonstrated that previous filtration is entirely inadequate to make the pools innocuous, since pathogenic organisms may easily gain ad-

¹² P. 542, *Lancet*, Aug. 20, 1910.

^{14a} P. 577, *Mun. Jour. and Eng.*, Apr. 26, 1911.

¹⁵ P. 689, *Eng. News*, June 8, 1911.

¹⁶ P. 1902, *Jour. A. M. A.*, Dec. 16, 1911.

¹⁷ P. 193, *Am. Jour. P. H., Mch.*, 1912.

¹³ P. 363, *Mun. Jour.*, Sept. 12, 1912.

mittance through the agency of persons frequenting the baths, various means have been devised with a view to maintaining the water in a sanitary condition. The public baths of Belfast¹⁸ are provided with the "Turnover" system for constant purification of the water through chemical precipitation, filtration and aeration, the water being drawn off at a certain point with a velocity of 50 cubic meters per hour and sent after filtration to the opposite end of the basin. All the analyses prove, it is claimed, the absolute absence of microbes or other injurious substances, the only water added in seventeen months being to replace the natural loss. Fürth and Schwartz in their experiments at Hamburg, have found that if fresh water is added continually, and constant purification is conducted by means of sand filters and aerators, the water can be kept hygienically clean for three weeks. At the Rotherite baths,¹⁹ instead of refilling the tanks with fresh water, the same supply is used again and again, a mechanical filter and an aerator being relied upon to purify the water, which is only renewed twice during the summer and once in winter.

¹⁸ Abstract, p. 518, Bull. Of. Int. Hyg. Pub., Mch., 1911.

¹⁹ P. 492, Eng. Rec., Apr. 9, 1910.

Disinfection Necessary According to American Experience

The results obtained in America seem to show that, even where continuous mechanical filtration is used, some form of disinfection is necessary, as in a short space of time, disease germs may enter the pool to the danger of bathers. Brown University¹⁴ filters the water in its gymnasium pool in a plant consisting, as that at Amherst, of a settling basin and a sand filter 6 feet deep, grading from 2-inch crushed rock to fine sand, the water from the pool being drawn off at the rate of 125 gallons per minute and pumped into the sedimentation tank, the overflow going from the sand filter down into the pool, the amount of water daily filtered being nearly equivalent to the contents of the pool. This system, as shown by Bunker, has been found to keep the water clear and of good color, but to have little effect on the bacterial content.

Hypochlorite of Calcium Best Disinfectant

Heat disinfection being impracticable on account of the cost, chemical disinfection was thought of, and Bunker experimented with hypochlorite of calcium, now in use in so many cities for the purification of sewage and drinking water. When used in the



PUBLIC BATH IN NEWARK, N. J.

ratio of one part to 2,000,000 parts of water, it decreased in 15 minutes the bacterial content from 500 per cubic centimeter to 30, and in 30 minutes to 10, in one hour the water being completely sterilized. A sample obtained eight hours later, when the pool water was still in motion from previous bathing, yielded a bacterial count of 5 per cubic centimeter. Future examinations showed that the pool remained sterile for four days, when the bacteria began to steadily increase. While in England Alexander²⁰ has advocated the use of hypochlorite of magnesia for the same purpose, Bunker's experiments as well as those of Lyster, Whipple and Tully show that hypochlorite of calcium or chlorinated lime is a cheap, most efficient and unobjectionable disinfectant of water in swimming pools.

How to Use Hypochlorite of Calcium

Hypochlorite of calcium as now used in gymnasium pools of American colleges is in pulverized form, and either sprinkled into the water or preferably dragged in a cheese-cloth bag about the bottom of the pool, until distributed. It should, of course, be kept in circulation, and continuous filtration or flow of water into the pool helps considerably to secure this. Its semi-weekly use is considered sufficient to render the results expected, although Lyster has advocated daily additions.

Action by Health Authorities

It is obvious from the above observations that swimming pools may easily become a source of disease, either through previous pollution of the water or contamination by the bathers. This situation would seem to indicate the necessity for the enforcement of preventive measures by the health authorities. A search of the health laws has failed to disclose any state legislation relative to this subject other than laws such as the Massachusetts act, based on previous English legislation, authorizing the establishment of public baths. Kansas, however, has a law which empowers the state board of health to supervise public bathrooms and bathhouses and to make regulations to prevent the spread of communicable diseases in such establishments. Among the regulations issued by state boards of health, none

have been found aimed directly at swimming pools, except those adopted by the Kansas State Board of Health, which are limited to forbidding the use or operation of public bathrooms and bathhouses by persons with communicable diseases.

City Ordinances

A similar paucity of legislation is evident from an examination of the city ordinances relative to hygiene. The ordinance, however, in force at Seattle and given below is quite comprehensive, and if thoroughly enforced should produce good results, but the absence of similar provisions is noticeable in most cities.

SEATTLE ORDINANCE ADOPTED MAY 15, 1911

SECTION 1. It shall be and it is hereby declared unlawful for any person to conduct, manage, or maintain any natatorium, swimming pool, or tank in the city of Seattle, or for any person to bathe in or use any such natatorium, swimming pool, or tank without complying with all the requirements, rules, and regulations in this ordinance contained for the protection and safety of the health and lives of the patrons of such natatoriums, pools, or tanks. The Commissioner of Health of the city of Seattle, or his duly authorized agents, are hereby charged with the enforcement of the provisions of this ordinance.

Sec. 2. All pools or tanks shall be thoroughly cleaned at least once each week in a manner and by the use of such disinfecting agents or cleansing materials as may be required by the Commissioner of Health, and all such pools or tanks shall be emptied and the water therein completely changed at least twice each week.

Sec. 3. The sides and bottoms of all pools or tanks shall be white, so that objects may be clearly seen, so far as possible, in all portions of the pool or tank.

Sec. 4. The management of all natatoriums, swimming pools, or tanks shall provide a sufficient number of attendants, instructors, and life savers, with qualifications and training sufficient to enable them in case of necessity to protect and save the lives of those using such pools or tanks: *Provided*, That the provisions of this section shall not apply to clubs and athletic institutions patronized by members only: *Provided, however*, That such institutions shall have attendants and swimming instructors on duty at all times while women, and children under the age of 16 years, are using the pools or tanks therein; but no child under the age of 12 years shall be permitted to use or occupy any pool or tank, whether open to the public generally or not, unless accompanied by a parent or other mature and responsible person.

Sec. 5. No intoxicated person, or one afflicted with tubercular abscesses, venereal or other infectious or contagious disease, shall use or be permitted to use any swimming pool or tank.

Sec. 6. No person shall use, or be permitted to use, any pool or tank while the same is being emptied, or refilled, or while the same is empty, and no patron shall be allowed in or about the same at such time.

Sec. 7. All clutes constructed and used in or above any swimming pool or tank shall be constructed in a safe and proper manner, and no person shall slide down such clute while standing or in a kneeling position.

Sec. 8. All swimming pools or tanks shall be provided with a mechanical filter satisfactory to the Commissioner of Health; cuspidors shall be kept and maintained in all dressing rooms and at the edge of all pools, and gutters shall be constructed at the edge of all pools or tanks of such depth and of such design as will effectually prevent water or other matter from flowing or falling into such pool or tank.

Sec. 9. All persons before entering any swimming pool or tank shall be required to thoroughly cleanse the body through the use of the shower or other similar device maintained and used for such purpose.

²⁰ P. 363, *Mun. Jour.*, Sept. 12, 1912.

Sec. 10. That all the provisions of this ordinance requiring changes or alterations in construction in natatoriums, swimming pools, or tanks, and the installation of filters, shall be carried out as required by the Commissioner of Health, but all such changes, alterations, and installations must be made and fully completed and installed within six months from the time of the taking effect of this ordinance.

Sec. 11. Hereafter, before the construction of any natatorium, swimming pool, or tank, the plans and specifications for such structure shall be submitted to and approved by the Commissioner of Health before a permit therefor shall be issued by the Building Department.

Sec. 12. No patron, attendant, instructor, or other person while bathing or while engaged or working in or about any pool or tank shall smoke or chew tobacco in any form, and it shall be unlawful for any person to expectorate in the water of any tank or pool, or to blow the nose therein, or in or at any other place than in cuspidors provided for such purpose, and conspicuous signs shall be posted in all such natatoriums, pools, or tanks calling attention to the fact that spitting is prohibited except in the cuspidors and showing the places where such cuspidors are located.

Sec. 13. A copy of this ordinance shall be posted, and kept posted, in a conspicuous place in all natatoriums, swimming pools, and tanks for the guidance and information of the public and patrons of such places.

Sec. 14. Any person violating or failing to comply with the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction shall be fined in any sum not exceeding \$100, or shall be imprisoned in the city jail for a term not exceeding 30 days, or may be both fined and imprisoned.

Sec. 15. This ordinance shall take effect and be in force 30 days from and after its passage and approval, if approved by the Mayor; otherwise it shall take effect at the time it shall become a law under the provisions of the city charter.

Only a few more requirements would be necessary to make this ordinance ideal, namely:

1. Possession by attendants of medical certificate testifying to their freedom from communicable disease;

2. Bathers forbidden to use other than individual towels, combs, brushes, etc.;

3. Avoidance of square corners in the construction of the pool and the building of a surrounding drain or gutter connected with the sewer and provided with a constant flow of water to carry off the scum;

4. Purification of the water two or three times a week by means of hypochlorite of calcium.

It is for health authorities to make their communities understand the importance of these precautions, and once made into law, enforce them by means of a licensing system and periodical inspections. Public baths, which were such a prominent feature of life in ancient times, have recovered their importance in modern civilization. When revived in the Middle Ages, they fell into discredit²¹ following the spread of syphilis and leprosy through their indiscriminate use. The occurrence of a similar happening should be made impossible nowadays; and adequate laws or ordinances ought to be framed to meet this need, as has already been done in the case of barber shops, and in one state in the case of manicuring and massage establishments. Of all sanitary laws, none are so good as those which are enacted *before* an epidemic and prevent it—and not *after* it, when the damage has been done.

²¹ P. 23, Goldschmidt, History of the Prevention of Disease.

Appraisals of Municipal and Public School Property

By Walter W. Pollock

A VERY able accountant has recently pointed out the wisdom of basing all attempts at efficiency upon accurate accounting. The mere statement of such a proposition carries conviction with it.

It has long since been recognized by accountants of the highest grade that there can be no true basis for accounting, in any business using physical and land property, without an accurate inventory and appraisal.

It would seem, therefore, that an appraisal is the real beginning of any efficiency campaign upon which to build, first,

an accurate accounting system and, next, the most efficient coördination of all the tools, both human and inanimate, that are to be used in the activity under consideration.

In the present movement for more efficient administration of city affairs, the necessity of an appraisal of city property has become apparent. In nearly all cities the municipal accountants have carried as the value of properties the original costs, no account being made for the deterioration of structures or for the appreciation of land values. Sometimes inventories are made

by department employes with or without judgments of value, and in either case there is usually an absence both of standardized methods of exercising judgment and of experience in that sort of work. The result of making an inventory under such circumstances verges on the pathetic, when expert accountants are called upon to use such a result as the basis of careful municipal bookkeeping and statistical work.

Wherever municipalities or boards of education carry fire insurance, there should be accurate appraisals of structures and equipment at least, as in the case of manufacturing institutions. The time for placing municipal insurance through agents of large political influence is fortunately passing away; and municipal officials are gradually coming to realize that proper efficiency in the matter of insurance risks can be attained only by means of an appraisal made by disinterested experts.

The two most comprehensive municipal appraisals made during the past year—and probably ever made—were those of the Pittsburgh Board of Education and of the city of Cleveland, performed by the Manufacturers' Appraisal Company.

The appraisal for Cleveland was completed and delivered to the city auditor a few weeks ago. It covered the land and structures only, of all the city-owned property. The total value, as given in the final appraisal figures, was \$40,728,079.51. It included the land and structures of the fire and police departments, parks and playgrounds, sewer outlets, cemeteries, water works, city hall and mall site, bath houses, market houses, electric light plants, city farms at Warrensville and Hudson (Ohio) garbage reduction plant, hospitals and several minor properties. It did not include the equipment of any department, overhead wires, underground pipe, street improvements nor bridges. The work occupied upwards of four months for its completion. Every structure was described in the appraisal, its new reproductive value computed and given, the depreciation both in percentage and dollar figures set forth. The land was appraised by the Somers System methods, by which every factor that entered into the value of each site was separated from every other factor, and

shown in the appraisal in detail. Cleveland had the work done at the suggestion of City Auditor Thomas Coughlin for bookkeeping purposes only, as it is not the policy of this city to carry fire insurance.

The Board of Education of Pittsburgh decided early in 1912 to have the land, structures and equipment of 132 schools appraised, for the dual purpose of accurate book accounting and fire insurance. The work occupied about five months, and was an even larger piece of work than the Cleveland city appraisal proved to be. Each structure was measured and described, its new reproductive value calculated and set down, the depreciation decided upon for each structure and the net present value thus ascertained and given. The same rule was followed as to equipment, after a full and complete inventory and description on every item of property found in each building was made. All of these appraisals of each part were brought together in grand summaries showing not only totals for all classes of properties, but the insurable and non-insurable values of all structures and equipment. As in the case of Cleveland, the land appraisal was made by the Somers System methods. This land appraisal was written in a book by itself, and is probably the most comprehensive and analytical land appraisal ever turned out by any appraisal company or individual.

The final figures for each of the large classifications as shown in the summary for this Pittsburgh school appraisal are as follows:

| | |
|---------------------------------------|-----------------|
| Value of land..... | \$4,925,515.00 |
| Building Construction— | |
| Reproductive value... \$11,772,520.90 | |
| Present value..... | 10,024,908.16 |
| Insurable value..... \$8,821,821.32 | |
| Equipment— | |
| Reproductive value... 1,001,102.48 | |
| Present and insurable value..... | 737,713.52 |
| Grand total..... | \$15,688,130.68 |

Among other recent appraisals of municipal or public property might be mentioned an appraisal of the county-owned property for Erie County, N. Y.; structures and equipment of public schools in East Orange, N. J., Evanston, Ill., Two Rivers, Wis., and Dunkirk, N. Y.; and an appraisal of the asylum for the blind in St. Louis, made for the state of Missouri.

The Insect Pests Most Dangerous to Municipal Shade Trees

By E. M. Swiggett

Superintendent of Parks, Utica, N. Y.

THERE is considerable confusion existing both as to the general character of our common insect pests and as to the reasons for different methods of combating them.

For example, because caterpillars (which are biting insects) and aphides (which are sucking insects) both destroy leaves of trees, many persons cannot seem to understand why the same remedy cannot be used effectively to fight both caterpillars and aphides.

To clear up this difficulty, the following excellent working classification is given:

- A—Biting insects, which have regular mouths and jaws and consume the exterior as well as the interior of the foliage.
- B—Boring insects, which drill grooves and holes in the actual wood of trees.
- C—Sucking insects, which, with a sharp beak or proboscis, penetrate the cuticle of the leaves and foliage and suck out the life juices of a plant.

Class A—Biting Insects

It will be readily seen that an insect of this biting type may be poisoned by spraying with poison the food he must eat; while, on the other hand, an insect which sucks out the interior of the foliage might get a such small fraction of a particle of poison on the point of his proboscis as to do no injury to him.

One of the commonest biting insect pests is the Tent Caterpillar, *Clissio Campa Americana*. This is a dull or dark brown moth with light lines crossing the wings. The insects hatch from cocoons early in the summer, lay their eggs in circular clusters on the stems of twigs, and these eggs in turn hatch into grubs or caterpillars of a large size.

These larvæ, grubs or caterpillars are of a "social" order. They spin large webs, or "tents," usually at the end of a branch. There they live, crawling over the tree and eating the leaves during the day until they go into the cocoon stage, from which they

hatch into moths either the same season or early the next season.

While it is entirely possible to spray the infested trees and poison the grubs, yet it is easier to catch most of them at home in their tent early in the morning or late in the day, and thus destroy the entire broods.

The Codlin Moth, *Carpocapsa pomonella*, is another more or less common pest. It is a rather small moth, with pale gray wings with brown spots near the ends of the fore wings. This moth lays its eggs in the young apple blossoms. They soon hatch and the grubs burrow into the young fruits, causing many of them to drop off. Those which do not drop off become "wormy" fruit. After the larva is fully developed it crawls out of the fruit, goes into the cocoon state under bark, leaves, rubbish, or in the ground; thence it emerges in time a full-grown moth, and the life history of the pest is completed.

The way to combat this pest is to spray the fruit trees with an arsenical poison spray just after the petals have fallen, when the fruit has set and just before the eggs hatch out.

The Tussock Moth, *Notolophus leucostigma*, is our worst midsummer pest of the biting type. The male is a winged moth, the female wingless and grub-like in appearance. The eggs hatch into caterpillars or tussock grubs in the summer. These caterpillars have the head and two body rings red, while the sides of the body are equipped with raised spots from which grow hairs forming the tussocks.

These tussock caterpillars do much damage to the foliage of trees, sometimes denuding a tree. While the losing of all its leaves once may not seriously injure a tree, yet repetitions of this experience reduce its vitality and it will eventually die.

The trees upon which the grubs appear may be sprayed with poison, or—what is better—the cocoons into which the grubs go, and upon which the wingless female lays her eggs after emerging, may be removed and the eggs all killed by means of

a steel brush vigorously applied. Both in Rochester and Utica, N. Y., the school children have aided the municipality greatly and have destroyed thousands of cocoons in "cocoon contests" or crusades begun by leading citizens.

The Gypsy Moth, *Porthetria Dispar*, is an importation from the old world, to date chiefly confined to the state of Massachusetts and a ten times worse tree pest than any of our natives have yet proven themselves to be.

This moth appears to belong to the same insect family as the Tussock Moth. The male is a sort of golden brown, the females white, while both have dark lines on the wings. The body bears protuberances along the sides, some of which are blue and some of which are red. Stiff, black hairs grow out of the tubercles.

Literature dealing with the subject of this pest may be obtained from the Massachusetts State Department of Agriculture at Boston, and also from the New York State Department of Agriculture at Albany.

The Browntail Moth is another dangerous and noxious pest. It has not, as yet, spread over a very wide range of territory, however. It is a white-winged moth with a very nearly regular body, almost rectangular from the top view, the hind end of which bears brown hairs from a well defined line across the back to the tip. Farmer's Bulletin 264, U. S. Department of Agriculture, Washington, D. C., treats very fully of this pest.

Class B—Boring Insects

The boring insect class includes peach borers, locust borers, chestnut borers and the common borers and sawyers, and other members of the great orders *Lepidoptera* and *Hymenoptera*.

About the only remedies are digging out the insects and plugging the holes and placing sticky bands as traps to catch the insects, in which last method the writer has no great faith.

Class C—Sucking Insects

Sucking insects are of two principal kinds: (a) the winged kind, to which belong the aphides, and (b) the scale insects, soft and hard—limy shelled both.

(a) Aphides are small, whitish, greenish or green yellow (sometimes black) lice-like

creatures, which infest roses and other perennial plants and leaves of trees. They suck the juices of the plant by piercing the cuticle of stem or leaf.

The most common aphid which troubles city trees is of the green, yellow or white type. It gets on the under side of the leaf, exuding "honey dew," a sticky excretion which falls on the pavement and has led some persons to think the leaves were losing their sap directly. The leaves are losing their sap, too, but through the medium of the aphid's body.

The best remedy for aphides is to spray the infested trees, especially on the under side of the leaves, with an oily emulsion composed of soap, water and kerosene as follows: Half pound whale oil soap, 1 tablespoonful kerosene, 1 gallon water, thoroughly mixed to form an emulsion which may then be diluted about four times. The object is to close the breathing pores in the pest and smother him, since a poison spray would not be effective.

(b) The scale insects include the famous San José Scale, the scale which attacks fruit trees most frequently; Cottony Maple Scale, Oyster Shell Bark Louse and Scurfy Bark Louse. These are all hard shell scales. The soft scales attack greenhouse and semi-tropical plants mostly.

Scale insects cannot be poisoned or smothered by ordinary means. The best remedy for scale pests is to literally burn them up with a lime sulphur mixture sprayed on, which should be made by boiling together the following, viz: 5 pounds flour of sulphur and 4 pounds quicklime in fifty gallons of water. Boil until a homogeneous fluid resembling custard is obtained, which must be sprayed on hot when the trees are dormant.

Spraying Machinery

Various very good hand-power sprayers are on the market and, like the machine sprayers, consist of a tank to hold the spraying mixture, a pump to force it out of the tank and a hose with spray attachment to spray the trees. They may be purchased from \$10 up. Very good hand garden sprayers may be purchased for \$35.

Machine power sprayers consist of a gasoline motor and a pump connected with a tank mounted on a wagon. The motor operates the pump, which pumps the spraying mixture from the tank into a leader

hose, from which it goes into $\frac{3}{4}$ -inch hose of varying length up to 100 or more feet. Bamboo poles, brass lined and tipped with spray nozzles are attached to the ends of the hose.

The men doing the spraying should be clad in oilskin suits and wear large rubber gloves. The long hose and poles are carried right up into the tallest trees, every part of which may be thoroughly sprayed in a little while.

For extensive spraying operations in large cities and for forestry spraying operations the writer recommends, as the most economical method of handling the problem, the spraying by the "solid stream"

method, which calls for very powerful machinery of the type made by different manufacturers and based on the principle followed by a former superintendent of Prospect Park, Brooklyn. The writer operated in the West Chicago Park System very extensively with the mist spray method. The United States Department of Agriculture has issued a pamphlet on the "solid stream" method which was written by Dr. L. O. Howard.

In purchasing spraying machinery, the thing to bear in mind is that, other things being equal, the machine having the fewest number of parts compatible with good work is the cheapest in the long run.

CIVIC WORK OF WOMEN'S CLUBS

The Baltimore Flower Market

By Harlean James

Executive Secretary, Women's Civic League, Baltimore

WHEN the warm spring days bring sunny skies and greening trees, the most hardened city-dweller yearns for the country. On those first mellow mornings when the windows are open, it is no wonder that the nerve-weary victim of clanging car bells and clattering cartwheels longs for grassy hills and peaceful roads.

A way has been found to bring to city dwellers some of the gardening joy and satisfaction and health that come from digging in the ground.

Nearly every city has much waste land in



PRIZE POSTER

vacant lots and yard space. Baltimore is constructed on the street-and-alley plan, with the stone and brick houses built in solid blocks on the sidewalk line, giving a long, narrow strip of land for each house, extending from the back door to the back gate opening into the alley. It has been the custom for generations to secure a fancied privacy by enclosing these strips of land with high-board fences.

Protesting against forlorn back yards, austere stone fronts and vacant lots devoted to dump heaps and billboards, a little



Photo by J. Horace McFarland

ONE OF THE FLOWER MARKET STALLS

group of men and women formed themselves into a Home Garden Committee affiliated with the Municipal Art Society and the Women's Civic League. In 1911 they held a flower market around the Washington Monument and again in May of 1912. Both years the market has been picturesque and successful—a combination of art and good business not always to be found.

The market was held in May, but the work began in January. Letters were sent out to those who had greenhouses and

country places asking for contributions of surplus stock. One woman grew a thousand little plants for the seedling table. The florists were invited to cooperate, and, just before the day, broadcast contributions of cut flowers were solicited. The lumber, labor, express delivery and accessories of all kinds, from rugs to tags and string, were contributed by public-spirited citizens interested in gardens.

Having provided the market, we had next to provide the purchasers. Artists were invited to make posters, and these were placed in the shop

windows all over town. For several days before the market the street cars carried on their front fenders announcements of the sale. For five weeks, too, a lecturer exhibited in the moving picture shows colored lantern slides of disreputable back yards and streets, contrasts with well-kept thoroughfares and beautiful gardens. This was repeated seven times a day, and each time a picture of the Monument was shown as the location of the coming flower market.

Twenty booths were erected on the circular sidewalk outside the iron railing.



FLOWER MARKET AT THE BASE OF THE WASHINGTON MONUMENT, BALTIMORE

Growing plants, seeds and flowers were on sale, also garden tools, baskets, pottery vases—in fact, "Everything About the Garden." There was a stand for geraniums, there were window boxes, large and small, planted to color schemes. There were aristocratic hydrangeas, ferns, palms and box trees in pottery tubs, and there were democratic red geraniums and dainty petunias in tiny paper pots. Ladies in automobiles came enthusiastically buying weeders, garden hats and patent hoes. Women leading toddlers and followed by large assortments of young America, were making eager purchases of little potted plants and seeds. All day long express wagons were sent off loaded with plants, lawn-mowers and window boxes, and all day long men, women and children made penny and nickel purchases.

The veteran gardeners gathered in little groups to compare last year's luck with this year's promises, and the newly converted ones listened with anticipation to descriptions of the wonderful gardens they could grow, and lost their way among unpronounceable names and successive seasons and seeds that are to be sown in the open in May and bulbs that are to be planted in September and plants that must be grown in hot beds and transplanted in sunny spots or shaded nooks and varieties that thrive in sandy soil and those that require rich loam.

It is quite remarkable, the number of men and women there are—city-bred for even one generation—who know absolutely nothing about growing plants, who think that a seed of anything, stuck in any kind of soil at any time of year and watered semi-occasionally, will invariably grow into a large and flourishing plant which will furnish a continuous succession of blossoms. It is pathetic to think that the knowledge of isms and stocks and bonds and social service and city government and the daily round of housekeeping and office-keeping and the nightly round of amusements have left the city man and woman, yes, even the city child, with no knowledge and appreciation of plant-life miracles.

Gardens, it has been found, will make juvenile offenders into responsible citizens, gardens will give saloon habitués something better to do; gardens will unite the family in at least one interest; vegetable gardens will provide food of a quality and freshness not to be found in the city markets and in quantity to reduce the cost of living. And yet social and civic workers are only beginning to realize that gardens will automatically prevent many of the evils they labor through an elaborate machinery of juvenile and police courts to correct.

When the ground space for gardens cannot be obtained there are still the ledge and balcony gardens and the window boxes—condensed city editions from the unabridged country gardens. Even potted plants for the shut-ins bring concrete human cheer, the most difficult gift in the calendar to have ready for use when needed. Ivy, grape vines, wistaria, honeysuckle and ramblers will all do their liberal best to cover the hot brick walls and the trellises over hot brick walks. The temperature in those yards filled with green is fully 10 degrees lower than in the paved, fenced yards so common in Baltimore.

The flower market distributes thousands of plants and seeds, and this is spreading the gospel of gardens; but it does more than this. The proceeds from the sales are devoted to the vacant lot gardens and to securing good advice for those home gardeners who do not know how. The garden superintendent has the lots plowed and laid out, and for the sum of \$1 a prepared plot with seed and supervision is given to each applicant. One man last year grew \$50 worth of vegetables on his plot, and this year rigged up a home-made hot-bed on his back porch to grow tomato, cabbage and pepper plants.

The flower market supplies directly the seeds and plants for the garden and at the same time secures means to start more gardens. It is also an annual fête which brings rich and poor, wise and ignorant, and just plain, middle-of-the-roads together with a common interest in gardens and civic welfare.



How Ought Municipal Affairs in the District of Columbia to be Administered and Financed?

Two Comments on THE AMERICAN CITY'S February Editorial

The Partnership Between the National Government and the District of Columbia

By Henry B. F. Macfarland

Former President, Commissioners of the District of Columbia

Congress at the session just closed emphatically disapproved all propositions for changing the relation between the national government and the taxpayers of the District of Columbia in the partnership which, since the organic act of 1878, has developed the National Capital. A very few men in Congress had suggested in formal reports and speeches radical changes which imperiled the prosperity of the National Capital, but Congress refused to adopt them. The view of Congress was expressed briefly but trenchantly in the report of the Senate Committee on Appropriations in reporting the District Appropriation bill as amended. The report was approved by the action of large majorities in both Houses subsequently. In it the committee said:

"In this bill your committee has recognized the half-and-half plan in the District of Columbia, and has restored the item providing for the payment of the interest and sinking fund on the funded debt to its usual place in the appropriation bill and in the same language used in former bills for many years. It seems to your committee that this question was settled years ago and has been recognized each year since.

"The act approved June 11, 1878, contains the following provision:

"To the extent to which Congress shall approve of said estimates, Congress shall appropriate the amount of fifty per centum thereof, and the remaining fifty per centum of such approved estimates shall be levied and assessed upon the taxable property and privileges of said District of Columbia."

"When the question of paying interest on the sinking fund was first submitted in the sundry civil appropriation bill it was most carefully considered, and after a very vigorous discussion it was settled in favor of the half-and-half plan. This was considered fair at the time, as shown by House Document No. 1978, Fifty-fourth Congress, first session. The untaxed property of the United States in the District of Columbia, exclusive of streets, ave-

nues, and alleys, was given as \$108,058,139, while that of the citizens was but \$191,417,804.

"The courts have construed the act of 1878 as an organic act, intended to dispose of the whole question of a government for the District. It is declared by its title to be an act to provide a 'permanent form of government for the District,' and in the case of *Eckloff v. District of Columbia* (135 U. S., 243), in construing this act, the court says:

"It is not one act in a series of legislation, and to be made to fit into the provisions of the prior legislation, but is a single complete act, the outcome of previous experiments and the final judgment of Congress as to the system of government which should obtain."

"It has been respectfully declared by those in authority that 'the District is a creation of the Union for its own purposes'; the city of Washington is not a mere city of the District, but it is the Capital of the greatest Nation on earth, and the people of the United States are interested in it as such. It is recognized as the seat of the National Government. It is not necessary to state the benefits which are enjoyed by the Government in the city of Washington. It is enough to say that it participates in all the benefits which result from the expenditure of the money collected as taxes in the District.

"Upon investigation it will be found that of the 6,111 acres taken for the city, 5,129, or five-sixths of the whole, were a gift to the Government, and the grounds upon which the Capitol, the Executive Mansion, and all original department buildings stand did not cost the Government a dollar. Of the 6,111 acres, 3,606 are occupied by its streets, avenues and alleys—more than 50 per cent of its entire area.

"It was understood that the 10,136 city lots donated to the Government should constitute 'a city fund' to be used for assisting in the erection of public buildings and for opening and improving the streets."

Senator Ingalls, of Kansas, who was for years chairman of the Committee on the District of Columbia, said:

"The United States of America have not expended as much money here as they received from the sale of lots here. The Government of the United States is to-day money in pocket from the sales of property in this District and this city."

"There is another provision of the bill which your committee believes should be eliminated from the measure. It proposes to change the method of paying for paving and resurfacing streets in the District by assessing one-half of the cost of the same upon the abutting property, instead of paying the whole cost from the general fund, as has been the practice

under the organic act. We believe this change would be unjust to the small property owners in the city of Washington and favor the continuance of the plan heretofore followed.

"It is claimed that the plan of paying for such work by assessing part of the cost upon the abutting property was given a thorough trial in the District during the reign of the board of public works, and after a searching investigation of District affairs by a joint select committee of Congress, lasting for several months, it was found it had wrought so much disaster and injustice upon the small property holders, and so many inequalities upon all classes of property, that it was discarded and the plan now in vogue of paying for the same out of the general fund was substituted therefor.

"After most careful consideration your committee recommends a continuance of the plan for paying for such improvements which has been followed since the enactment of the organic act.

"We believe that to follow the plan proposed in this bill in regard to paying for pavements would not only be unfair to the property owners of the city of Washington, but would be in violation of the provisions of the organic act."

Freak bills with reference to the District of Columbia are not uncommon at any session of Congress. Freak propositions on this subject are constantly being made by people outside of Congress. But the last Congress saw much more dangerous propositions seriously considered, and the country is to be congratulated that they were defeated so signally.

It is difficult in a brief statement to treat adequately such a question, but it may suffice to say that the desire of the country to have its capital as nearly perfect in all respects as possible depends upon the maintenance of the arrangement made in 1878, after four years' consideration by Congress and taxpayers of the District of Columbia, under which the then existing indebtedness of the National Capital—due to the neglect of Congress, which had made no regular contribution before—and the subsequent maintenance were to be paid half and half by the United States and the taxpayers. This was made chiefly on the theory that being the National Capital planned by George Washington on a magnificent scale, and requiring in all its departments because of its territory and its peculiar conditions expensive treatment, it could not be carried on, much less developed by extraordinary improvements, with the tax money of the comparatively few people living in the District of Columbia.

An additional reason was that in value the United States owned more than one-half of the real property of the City of Washington. The taxpayers surrendered the suffrage in part because of this financial arrangement, which was the only feasible way of dealing with the peculiar situation.

Great progress has been made in the thirty-five years since, because the arrangement has worked so well. The taxpayers have paid fully the average taxes according to all proper statistical comparison the country over. Their contribution in taxes, licenses and other ways is about six million dollars a year; this from a population in the entire District of 350,000, of which over one-third is colored, the largest colored population in any place in the world.

Congress, in spite of the efforts of a few men to change the basis of assessment or to increase the burden of the taxpayers, after thorough consideration declined at the last session to do so, showing its satisfaction with the present tax arrangements. Representative Henry George, Jr., naturally proposed his father's single-tax plan, but it was not even voted on in either House. A proposition to spoil the uniform development of the streets and avenues by changing the plan which has worked so well of making such improvements out of the general revenue and substituting an assessment on the abutting property owners which would have delayed the development of the capital was defeated.

Congress in general showed no willingness to make the National Capital an experiment subject and so practice on it a species of vivisection certain to delay if not seriously injure the orderly development of the National Capital according to the well-considered plans, not only for its physical, but for all its other features.

When all Senators and Representatives in Congress realized that their intelligent constituents generally want these plans carried out and devote themselves to executing the will of the people in this respect, the National Capital will soon be all that the country desires. Ignorance of the history or of the actual condition or of the plans for the improvement of the National Capital is responsible for the unintelligent criticism of Washington affairs occasionally seen in magazines and newspapers and for legislative propositions that do not rep-

resent the desire of the country—which is no less the desire of the taxpayers of the District of Columbia—that the capital of the greatest republic should be the best capital on earth, morally as well as physically.

Congress Responsible for Undesirable Conditions

To the Editor of THE AMERICAN CITY:

In the editorial of your issue for February, 1913, you have treated a subject of vast importance to the citizens of the District of Columbia. In a way, I fear that your inability to cover exhaustively, in the space allowed, municipal questions relating to the District may create a wrong impression of the actual status of affairs at the capital city of the nation. A large portion or your remarks are based upon statistics and data furnished by Congressman Johnson, chairman of the committee of the House of Representatives on the District of Columbia of the Sixty-second Congress. It is not my desire to submit an argument attempting to prove errors in Mr. Johnson's viewpoint and statistics, but the attitude of this gentleman leads me to draw attention to a remarkable condition of affairs in the District, where I have been a resident for about twenty years. Though not altogether well known, one-half of the expenses of the District of Columbia—which, for all practical purposes, is the City of Washington—is contributed by the national government, the other half being raised by taxation of the citizens of this territory. Congress has absolute power over the District, every public expenditure being under its control. If there is anything seriously wrong with the method of governing, taxing, or legislating for the nation's capital, this must be laid at the door of Congress. The people residing in the District are not responsible, though, as is natural in a city of the size of Washington, there are many thousands who would take pride in—and greatly desire, in fact—the right of franchise and a voice in the local government.

The peculiar condition to which I referred first, however, resides in the fact that the legislation for the District for the purposes of methodical procedure is placed by Congress in the hands of a Senate Com-

mittee and a House Committee, and the chairmen of these committees are thus constituted the "powers that be," representing the whole Congress for the purpose of suggesting and controlling legislation for our people. During the last Congress the chairman of the House Committee was a man who has proved himself not to be in accord with the desires and public spirit of the District citizens; in fact, he proved an opposer to much legislation required by our citizens and for which they depend upon him primarily by reason of his position as their representative. To all fair-minded persons, a condition of this sort must be seen to be prejudicial to the interests of a large body of American citizens who, of all those in these United States, are the only ones not granted a voice in their government by the Constitution. In a recent address before the Columbia Historical Society, Thomas Nelson Page, the eminent author, long a resident of Washington, said: "It is a singular and almost tragic situation to find the governing body of the District of Columbia now neglecting and now actually assailing those governed by it."

Considered from another viewpoint than yours, the question of rents may be worthy of some attention. Rents in the District are much higher than in most cities of the country, and living is higher to our people. This is due materially to the fact that Washington is the seat of the national government and attracts to it higher government officials, diplomatic representatives, and a transient wealthy population, which do little to promote the interests of the city because of outside interests. This portion of the population being able to pay well, tends to create an increase in the cost of living to those of the middle class in the city. Washington has not a large class of factory or poor people always found in a commercial city, and which tends toward a reduction of living costs. Thus we find the national governmental function of Washington a sort of thorn in the side from this standpoint and others which I do not propose to mention.

I glean that the attitude of THE AMERICAN CITY is favorable toward the elimination of a national contribution toward the expenses of the District. An exhaustive statement of the advantages of maintaining or eliminating the present plan would have

to be lengthy. In fairness to our citizens, I may point out that the main sacrifice made by them is the surrender of the right of franchise. Secondly, our people subject themselves to living cost which is excessive as compared with many cities, and due surely to the fact that the city is virtually national. Thirdly, there is a sacrifice in that, as a city of national departments, Washington has not been, and probably will never be, promoted to the class of a commercial city with its wealth and other advantages; for those governing are not interested in our commercial advancement. Thus it is that Washingtonians, in raising their families, cannot look to their home city as a field for the endeavor and success of their children. Annually, thousands and thousands of young men and women are compelled to leave Washington and seek a successful career in other cities of commercial importance where there are possibilities of success absolutely unattainable in the District, with its purely governmental institutions that hold out for man or woman an attenuated opportunity indeed. This is a subject that goes to the heart of a resident of Washington, and one for thoughtful consideration on the part of those not in a position to realize the exact situation.

In conclusion, and with the desire to offset, if possible, the impression that because Washington is the capital of our nation, our citizens derive much benefit from the system of government, and especially the magnificent contribution of the national government toward our expenses, I wish to say that statistics prove that the taxation assessments in Washington are— notwithstanding said contribution—on the whole, higher in comparison than the assessments in a good majority of cities of the same class, according to data prepared about two years ago.

Whenever the time comes that Congress wishes to relieve itself of the responsibility of governing the city of Washington, and will in fairness legislate so that the great

acreage covered by and surrounding the magnificent public buildings of this city will be subject to an equitable amount of taxation, I am free to say that there are thousands and thousands of citizens here who will be glad to take up the yoke, recognizing even as they do that Washington has now a government which is cleaner, more efficient and desirable, in certain respects, than the municipal government of any city in this country. And one of the first things that will be attempted when our citizens have control of our government will be to reduce the amount of taxation now existing, and to effect a more fair distribution of the burden of such taxation, which many of us think is a subject that could for years have received far more serious attention on the part of Congress.

James Bryce, the English Ambassador, gives this as his idea of the future of Washington:

"We should make this a Capital of Capitals; Washington to overtop the capitals of the states as the nation overtops the state."

"All that is finest in American conception, all that is largest and brightest in American thought, should be represented here in the capital of a great nation."

"Washington is the most favored by nature of the capitals of the world."

"A beautiful park should connect Washington and Baltimore."

"You should make the man from Maine and Arkansas and Florida feel that Washington belongs to him."

"The Government should purchase strips along both sides of the Potomac; quarrying in the Virginia palisades should be stopped and a national boulevard should be constructed there."

"Land along Rock Creek should be owned by the Government for fifteen miles, and a beautiful national park should nestle there, etc."

After all, with such ideals in process of realization, is it reasonable that the citizens of Washington should stand the expense of all this? Neither is it reasonable, nor have they the resources.

JOHN F. ROBB.

Washington, D. C.





The Practical Program of a Village Commercial Club

By Fred M. Hansen

Secretary, County Department, Young Men's Christian Associations of Iowa

PATON, Iowa, is just a country town; in fact, it has less than 500 inhabitants. Several years ago the men thought that more progress might be made by the organization of a commercial club. There were those who considered such a course impracticable, but others insisted on trying to do something, and so the club was organized.

The plan was adopted of meeting once a month, and having first of all a half hour to an hour of social time, with something to eat. This part of the program gave a chance for the men to visit informally and to discuss some of the things which the club might wish to do. Then there was a presentation by some expert, who might be a local man, of some specific thing in which the club was interested. This might be a talk on public health, recreation, advertising, civic improvement, or some similar subject. This presentation, which often had specific recommendations, was followed by discussion and very often some action on the subject. Usually a committee was appointed to carry out any plans formulated, and plans were made right in the meetings. This is a story of some of the things undertaken:

Very soon after organization the club invited the secretary of a city commercial club to address it on "Advertising." This talk had many practical suggestions. Succeeding issues of the local paper showed the results of the talk. A committee was also appointed to arrange for and hold a "Special Bargain Day," when each merchant should advertise some special thing at bargain rates. This was a successful affair. The committee made use of the local paper and special bills, and quite a

number of people were attracted to the village on this particular day. Other talks on advertising followed this, and some talks on "Salesmanship" came also.

This town has always raised a large sum of money to have a carnival. Outside attractions were brought in, and with them came some things which were not of the best moral influence. Some one suggested the idea of a community play day, when all should take part in games. The idea seemed vague to many, but it was tried. The stores were locked up for most of the day, and people went out to play. The forenoon saw four ball games, so organized as to make as many people take part as possible. Three innings was the length of a game. The boys played the business men, a married men's team played a single men's team, and the married ladies played the girls, while two farm boys' teams got into the game also. It was truly said that there had not been as much fun on the ball ground for several years.

At noon there was a picnic dinner, and following this came field sports: group games for the little folks, races for men, women, children, farmers, business men, etc. The whole was planned to make many take part. The program was finished with a ball game between the town team and a team of "had-been stars." It was voted by all to be about the best time they had ever had. The banker of the town talks about it wherever he goes. He says that it's the best form of entertainment ever devised, and the town ought to get a patent on it. Nearly 200 people actually took part in games, and the whole thing cost less than five dollars. It is an annual affair in that town now.

In the state of Iowa there is a State Lecturer on Tuberculosis. This man was secured for a public meeting which packed one of the churches of the town. He not only talked on tuberculosis but on health and hygiene in general. The state furnishes valuable printed matter on prevention of diseases, etc., and the club undertook to distribute some of this later.

This town had never had a clean-up day except such as had been forced by the town authorities. The club undertook to institute an annual clean-up day. It was successful. The people did not know that there was so much rubbish in the alleys. It caused a transformation. Ashes, tin cans, etc., had to go. Many people were willing to volunteer their services for this work.

Like all villages, this one had some boys who were not what they ought to be. The men wanted to let the boys know that they were interested in them and that they expected something of them. So the club had a banquet and invited the boys of the town to be their guests. Business men talked on such subjects as these: "The Value of Character in Business;" "What We Men Expect of You Boys," etc. This affair was a success; practically every boy in town was present. It was good for the men, too.

Such topics as good roads were agitated. And the obligation to the farm community was not forgotten. An institute was held, where there were speakers from the State

Agricultural College and at which the business men offered prizes for corn contests. This drew crowds of country people, and it was difficult to find a room large enough to accommodate those who came.

The town had an old school building which was not fit for a good barn. The club started an agitation for a new school house; and while it is never safe to say what forces brought certain things to pass, the effort of the club was no doubt in part responsible for the splendid new \$15,000 school building which now helps along education in the town.

The town park had always been a disgrace. The trees were untrimmed, the grass not mowed, and weeds had their own way. In a club meeting having to do with civic improvement the matter of making the park a credit to the town and of use to the community was discussed. It resulted in a dozen of the business men volunteering to put it in shape. So the lawyer, the doctor, the dentist, the banker, etc., got busy with lawn mowers, and wrought a great change. The park began to be used, and in a year or so the town authorities, having seen these splendid results, took over the care of the park. Flower beds, trimmed trees, well-mowed grass and a place which is of credit to the town, and a service also, are the result. To start such movements is usually left with the women of the community, but in this case the men did it.



THE \$15,000 SCHOOL HOUSE AND THE NEAT PARK IN PATON, IOWA

Bridging the Gap of Indifference Between City and Country

The Clinton (Iowa) Plan for Agricultural Betterment

By C. F. Terhune
Secretary Clinton Commercial Club

"N ECESSITY is the mother of invention." The only trouble is that we are not always able to recognize the necessity in its earliest stages. If we were, then there would never be a "crying need" for something that was not already at hand. How much better would it be if all human requirements and all human necessities could be, like vinegar, born before its mother! Clinton, Iowa, while being the antithesis of vinegar, has demonstrated its forethought in providing a substantial supply of a coming necessity before this necessity became deplorable. We refer to her foresight in providing her people with an agriculturist, an expert farmer to work with the farmers and prevent poverty of soil, before even the symptoms were marked.

The "Clinton Plan" is a simple one. In order that it might be successfully launched, it was important that some organization already existing should stand sponsor for it. So the Clinton Commercial Club undertook the responsibility, and, after going over the matter, formulated plans and organized for the work. A contract for a term of three years was entered into with Prof. M. L. Mosher, a practical farmer, who for the last seven years had devoted himself to the work of promoting agricultural conditions throughout the state as an instructor from the Agricultural School of Ames.

The Commercial Club then inaugurated a publicity or educational campaign; every farmer in the county was made acquainted

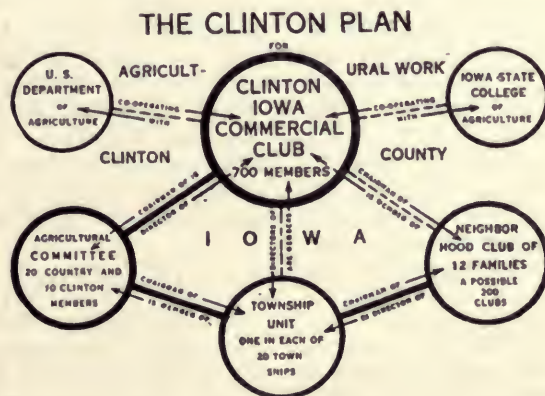
with the plan of organization and what it hoped to accomplish. The farmers were convinced that the Commercial Club was acting unselfishly; that it was offering its services in a cause that must first benefit the farmer and from which Clinton would receive only secondary benefits. They were also invited to become members of the Commercial Club, paying the same dues that the city members pay and receiving the same voting and other privileges; they were assured that their money would be kept separate and that it would be expended for no other purposes than the agricultural extension work.

The carrying on of this work was handled by an Agricultural Committee of the Clinton Commercial Club, under the leadership of one of the directors. This conforms with the plan of organization of the Club, by which each Director is chairman of a

standing committee, so that when the Directors meet the chairman of all committees will be present.

The Agricultural Committee was further strengthened by the appointment of thirty men as members of the committee. It was stipulated that twenty mem-

bers of this committee should be from the farms and ten from the city having interests with the farming community. The plan of organization also provided that each of the farmer members of the committee should be the chairman of a township organization, there being twenty townships in the county. Each of these township organizations should have its own constitution and by-laws; should have a member-



ship as large as possible, with dues of \$1.25 a year, \$1 of which dues should be turned over to the Clinton Commercial Club; and for each \$10 so turned over, a representative of the township unit should be elected to membership in the club, it being understood that at least 10 members should be so elected and \$100 turned in. Each local township unit should have ten directors (members of the Commercial Club) and each of these township directors should be the chairman of a neighborhood club limited in membership to twelve families. In this way 120 families in each township would be affiliated with a township unit.

The object of the neighborhood club is, among other things, that once a month twelve member-families should meet at the home of one of the members and carry on such program as is deemed expedient, usually relating to local neighborhood affairs and for the promotion of social relation in rural districts. These neighborhood clubs are bidding fair to be the life-giving factors of the whole organization and of great value in creating sentiment that will make life on the farm worth while.

When the work is fully organized along these lines there should be at least 2,400 families in Clinton County in direct communication with the Clinton Commercial Club. No one can estimate the many and varied benefits, ethical and financial, that will result from such an organization, with an experienced man directing the large features of agriculture, as well as better roads, improved school conditions, animal husbandry, horticulture, planning and arranging the farm buildings, looking after dairy interests, and, in fact, touching every phase of activity connected with the farm.

Progress Already Made

To illustrate the success of this work it may be stated that, although this work was started in September and very little result was expected during the winter months, up to the present time, March 15, Professor Mosher has traveled by team 136 miles, by auto 1,862 miles, by railway 2,577 miles, and has conducted 171 appointed meetings, at which the total attendance has been 10,800. In addition to this, many trips have been made to take up direct with the farmer his own problems, such as division of fields, rotation of crops, farm building,

testing of grain and grass seed, the installation of electric lighting in the homes, the installing of water works, the selecting of farm machinery and buying of stock. During the series of meetings where seed corn was exhibited and judged, the best samples were secured to be planted on the County Farm, so that in the future the best of all of these samples would be grown in sufficient quantities to supply all farmers of the county, thus insuring uniformity. Some other meetings were held for the purpose of stopping a threatened epidemic of hog cholera. These latter meetings were participated in by veterinarians from the department at Washington.

The farmers are becoming enthusiastic over the club undertakings, and indications are that they will meet in the club's new building during the coming summer with their city friends on equal terms in *their* club. Their families will be provided with rest rooms and parlors, where they may use them as their own; and the farmers expect that they will utilize the coliseum part of this building for agricultural exhibits, indoor county fairs, stock shows, farmer institutes and all such meetings pertaining to agricultural conditions requiring a hall with dimensions that would seat up to 3,500 people. To answer the many inquiries which are being received for full details of the "Clinton Plan" a printed statement has been prepared giving the details of organization, including constitution and by-laws of the local township units and of the neighborhood clubs. A copy of this statement will be sent on request to anyone interested.

How the Work is Financed

It should perhaps be added here that the financing of this agricultural work was done in the following manner: The Crop Improvement Committee of the Council of Grain Exchange, with offices in Chicago, is offering to the country at large \$1,000 for each county that will employ an agricultural expert subject to conditions set forth by the Crop Improvement Committee. This \$1,000 was accepted by the Clinton Commercial Club and is now being used in this work. The Department of Agriculture at Washington, through Congressional appropriation, is assisting counties throughout the country to secure the employment of

an agricultural expert upon conditions of which the club also availed itself, and from this source the sum of \$100 per month is being received.

To obtain the coöperation of the Federal Department of Agriculture it would be well for those desiring to start a similar work to address a letter to W. A. Taylor, Chief of

Division of Plant Industry, at Washington, D. C. Information may thus be secured as to the manner in which the Government will coöperate in local agricultural work. To secure the coöperation of the Council of Grain Exchanges, address Mr. Bert Ball, Secretary of that Association, at the Board of Trade Building, Chicago, Ill.

Women on the Police Force*

By Mrs. Alice Stebbens Wells

Member of the Police Force of Los Angeles, Cal.

THE arrival of the Woman Police Officer is a striking commentary upon the changed conditions of our day.

During the last half century the world has been frequently reminded that women could not be police officers and could not be soldiers. The police officer has arrived as a perfectly normal being and to fit a logical need.

The battles of the future will be intellectual and moral battles, and a vast army of women have been studying and working to prepare themselves as no body of soldiers has ever done before to help wage victorious warfare against the forces that would destroy the race.

Out of the many which might be named, two generally inclusive reasons for the woman police officer center our attention.

1st.—The police department is the great peace army. Its province is to keep the peace, to prevent crime through maintaining law and order.

During the last 25 years an active spirit of prevention has manifested itself in every line of human activity. A spirit based, no doubt, upon two deepest promptings—the quickening sense of brotherhood, of mutual responsibility, and the very self-preservation of the race under our increasing social complications. The woman officer is an emphasis upon the prevention spirit of police work.

2d.—To-day men, women and children face together industrial vicissitudes and socially commingle. Therefore, it now requires the best that both men and women can give, in the police department as elsewhere, to adequately meet the needs and properly handle men, women and children. Naturally, then, the woman's work concerns itself mostly with women and children.

I was appointed as a regular police officer in Los Angeles two years ago last September, a city ordinance creating the position having been passed in the regular way. In due time the civil service examination was called—the first of its kind—and, having passed it, the position became an integral part of the police work of our city. Since, we have added two more women, and other cities have done likewise.

Coming naturally under the domain of the woman officer are the places of amusement where the young gather—dance halls, skating rinks, picture shows, penny arcades, amusement parks, etc. Whenever it is necessary to make an arrest, the woman officer can make it, and carry the case through the court just as her brother officer would. I made 13 the first year, and had no serious difficulty. The proprietors are property owners, have interests at stake, and there would be no gain by resisting or refusing to appear upon summons.

I have office hours, and women come for help and advice for which they would not go to the regular police department.

* A summary of a recent address before the City Club of New York.



A Sanitary Method of Garbage Collection

By William Hay McLain, M. D.

Health Commissioner, Wheeling, W. Va.

THE city of Wheeling, W. Va., with a population of 42,000 people, is located upon a very hilly territory which has always made the collection of garbage a troublesome matter.

The contract system was used until 1911, when the work was turned over to the Health Department. The equipment included a new incinerator with natural gas as fuel, a new barn with all modern conveniences, twenty horses and nine new wagons.

Everything was done to make the collection less of a nuisance. The wagons were steamed and thoroughly washed every day at the incinerator, the men were clean, the horses well groomed, but still the old familiar and unpleasant odor was detected when a garbage wagon made its appearance.

Investigation showed that the trouble lay with the householders' method of keeping garbage in filthy cans or boxes. It was soon recognized that no amount of care upon the part of the collectors could make much improvement unless different methods were used in the home. The garbage cans of Wheeling were not more offensive than those of most other cities, but they were well up to the average filthy receptacle.

About one dozen families at that time were wrapping their garbage in paper. The difference from the ordinary method was so marked that it was decided to make a campaign for betterment along this line, requesting every householder to drain garbage of all moisture and wrap it in paper.

During the month of June, 1911, much publicity was given the proposed plan. Newspaper men were shown how garbage could be kept by the new system, in comparison with the usual methods, and their articles and cartoons aroused much discussion.

Rules were formulated and 10,000 cards containing them were distributed, an attempt being made to get one into the kitchen of each householder.

The immediate response was very gratifying, and within three months at least

one-third of the householders had adopted the plan. Of course some did it much better than others, but the improvement was a wonderful one. At first the collectors tried to thank those who wrapped the garbage, but this soon had to be abandoned. All of the department stores advertised

HEALTH DEPARTMENT.

WHEELING, WEST VIRGINIA

THE GARBAGE OF WHEELING IS COLLECTED
UNDER THE DIRECTION OF THE BOARD OF
CONTROL AND THE HEALTH DEPARTMENT.

RULES

Pertaining to Collection of Garbage

1. The owner or occupant of each house is required to provide metallic cans with close fitting covers, and with handles upon the sides.

2. GARBAGE CANS SHOULD BE OF SUFFICIENT SIZE TO HOLD 20 GALLONS. Cans must be placed in a position on the GROUND FLOOR of the premises, easily accessible to the collector, and when filthy, leaking, or defective in any way, must be removed.

3. Provide a sufficient number of cans to hold at least SIX DAYS ACCUMULATION. Garbage will be collected more frequently, but this will prevent an overflow and provide for any emergency.

4. Put into the garbage can only animal and vegetable refuse from the kitchen. Garbage cans containing WATER, SLOPS, TIN CANS, GLASSWARE, CROCKERY, EXCESS PAPER or CUSPIDOR EMPTYINGS WILL NOT BE EMPTIED BY THE COLLECTOR.

5. Garbage drained of all moisture and wrapped in paper before being placed in the can will neither smell badly in hot weather, nor freeze and stick to the can in cold weather. This is the ideal way to keep garbage. Do this and have a clean can all the time. CLEAN GARBAGE is NOT offensive but a FILTHY CAN OR ANY WOODEN GARBAGE receptacle is.

6. Report all dead animals to the Health Department, giving the exact location of the same.

7. Report all complaints to the Health Department, City Building.

Both Phones 366. Hours 8 A. M. to 5 P. M.

HANG THIS CARD IN YOUR KITCHEN



DEPARTMENT STABLE-WAGON BEING WASHED AT END OF DAY'S WORK

special sales on garbage cans, and the local manufacturing plant which made them was soon unable to supply the demand.

Wheeling is not a city of rich people, but is a town with many mills and factories, a large laboring class and many foreigners. For that reason it was not expected that all people would wrap their garbage or be overjoyed when they heard of the new requirement.

There has been no penalty for non-compliance, but at present more than half of the householders use this method, and once used it is never abandoned. In some sections of the town all the garbage is paper wrapped, and when it arrives at the crematory not a drop of it is in the wagon. It is possible to pick out packages, open them and still not soil one's hands. This has often been done by the writer, whose attention was perhaps attracted by a certain package. In one instance a number of discarded school books were found, which a thrifty householder had placed in her can. As the name was on the title page, they were returned unspoiled to point out the fact that school books were not "animal or vegetable refuse from the kitchen."

Other neat looking packages sometimes con-

tain tin cans, but these cases are exceptions. The better class in all sections of the city now wrap their garbage and the result is an improvement in the back yard, a diminution of the unpleasant odor always associated with a garbage wagon, and a longer life for the can. In addition, the work is much less unpleasant for the collectors, and less fuel is required to consume the garbage.

During 1912, 6,018 tons of garbage were collected and incinerated, 40 tons being the greatest amount collected on any one day. The wagons used are of the Holzbog type.

Each wagon load is weighed upon its arrival at the incinerator after the water is drained from it; consequently these figures represent the actual weight of garbage collected and are not merely an estimate. Before the days of paper-wrapped garbage, 600 pounds of water were removed from one wagon load.

This system was first advocated, so far as the writer knows, by Dr. P. M. Hall, Commissioner of Health, Minneapolis, Minn.



WAGON BEING STEAMED; ALSO LOAD OF PAPER-WRAPPED GARBAGE



The editors are glad to receive photographs and data for possible use in this department from municipal officials, water works superintendents, consulting engineers, manufacturers or others having interesting information on water supply subjects.

Methods of Protecting Lake Water Supplies*

"The best method is to filter the water. This is more efficient than disinfection of the water and much cheaper than purification of the sewage"

By George C. Whipple

Professor of Sanitary Engineering, Harvard University; Consulting Engineer, New York City

MORE than five million people live in cities and towns near the shores of our Great Lakes. Most of these communities take their water supplies from the lakes and discharge their sewage into them. Except where the water supply has been purified before being used, this practice has very seriously affected the health of the lake cities and has been the cause of much loss of life. With our present sanitary knowledge it seems strange that such a filthy practice should have been ever tolerated. It is still more strange that raw lake water should continue to be used in cities which are doing so much in other ways to improve public hygienic conditions.

Generally speaking, the water of the Great Lakes away from the shores is of excellent quality for the purposes of a public water supply.

The water near the shores of the lakes may be quite different in quality from that farther out. This depends much upon the character of the shore, the proximity and character of inflowing streams, the season of the year, the wind and many minor factors. Generally speaking, the shore water is more turbid and contains larger numbers of microscopic organisms and bacteria than the broad waters of the lakes, and, what is more important, it is more likely to be contaminated with sewage discharged either directly into the lakes or into streams that

flow into them. In the vicinity of large cities, and especially when these are situated upon large rivers, the pollution of the shore waters is a very serious matter.

Sources of Pollution of Lake Water

The principal sources of pollution of the lake water supplies are: (1) sewage discharged directly into the lake along the water front; (2) sewage discharged into streams that flow into the lake; (3) sewage-polluted mud dredged from rivers and harbors and dumped into the lake; (4) sewage sludge transported by ice from the shore outward; (5) fecal matter discharged into the lake from boats. The danger of pollution of the water supply in any case depends upon the opportunities afforded for the commingling of the sewage with the water before it reaches the intake, and upon the natural purification that takes place in the lake.

The evidence is conclusive that natural methods of purification cannot be depended upon to protect the sanitary quality of the water supplies taken from the Great Lakes. Practically every city, whether great or small, that has depended solely upon the protection afforded by dilution and a supposedly remote location of the intake from the sewers has suffered from water-borne diseases. As a rule, the smaller cities have suffered more than the large cities, as their water supply intakes and sewer outfalls are nearer together. The visitations of typhoid

* From a paper read at the recent International Congress of Applied Chemistry.

fever have often been intermittent, and their failure to occur at regular seasons engenders a false sense of security; but sooner or later, when the necessary combination of currents and infection occurs, every lake city that fails to protect its water supply is bound to suffer from water-borne diseases.

Various expedients have been used at different times and at different places. At Chicago, after it became certain that its water supplies were subject to sewage pollution in different degrees according to the weather conditions, the Health Department of the city inaugurated the policy of making daily analyses and issuing notices of the condition of the water in the daily papers, warning the people to boil the water or to cease using it for drinking in case the analysis was bad. This was many years ago, before the opening of the Drainage Canal. The practice may have had some beneficial effect, but it was placing dependence upon a frail reed. It had the inherent disadvantage that the quality of the water changed more rapidly than the analyses could be made and published.

A second method of protection would be

to abandon the lake water altogether and substitute some other source of supply. This has been considered in some cities, as, for example, at Toronto, where a gravity supply was once considered and rejected. Most of the lake cities are so situated that any other source of supply than the lake itself is impracticable, or very costly, so this course has not been adopted and is not likely to be.

A third method is to extend the intake further into the lake. This has been done repeatedly. As the cities have grown, the local pollution has become heavier and larger intakes have been required on account of greater water consumption. The effect of using longer intakes farther removed from sources of pollution has invariably improved the condition of the water, sometimes very noticeably. After a time, the water at the new intakes becomes contaminated, so that the remedy is merely of temporary benefit. Then, too, there is a limit to which this can be carried, for beyond a certain distance the water off shore becomes too deep for economical pipe laying.

A fourth method would be to keep the



sewage out of the lake. This is practically impossible, as the natural drainage of the lake cities is towards the shore. Ordinarily, no attempt has been made to keep the sewage out. Chicago presents the only important instance where it has been accomplished, and here it has not been accomplished in full. Situated at the south end of Lake Michigan and with only a low divide between it and the streams that flow westerly into the Mississippi River basin, and with this divide near at hand, it was possible to cut a canal through the divide, and turn the flow of the principal sewers into it, so that the sewage would flow westerly. This project, known as the Chicago Drainage Canal, cost upwards of forty million dollars and entails a considerable annual charge for maintenance. A city of small size could not have financed so great an undertaking.

The Chicago Drainage Canal has very materially reduced the amount of typhoid fever in the city. It has not entirely prevented all pollution of the water supply. The large storm flows of the sewers still go into the lake and at certain times this may affect the water supplies from the various cribs. Furthermore, the accidental contamination of the lake water from so large a city, with its shipping, its dredging operations, its industries located along the shore, is by no means a negligible factor. To protect the lake water against all these is a difficult task, except by filtration.

Protection by Sewage Treatment

The next method of protection to be considered is the purification of the sewage before it is discharged into the lake. This has long received the attention of engineers, and so much has been said about it in popular writings that the public has come to have faith in it. It is a plausible idea, and theoretically sound, but it has one fatal defect. To accomplish the purification of all of the sewage at all times demands works of excessive cost, while to partially purify the sewage, or to fail to purify it at times of storm, does not give the desired protection to the water supply. Nearly all large cities are seweraged on the combined system, that is, the same pipes and conduits carry both house sewage and storm water. Purification works large enough for the treatment of all the storm water, as well as the house sewage, are almost never con-

structed, but overflows are provided to take the excess sewage at times of heavy rain. This storm overflow is merely the house sewage diluted, and, from a sanitary standpoint, is dangerous. The storms that produce the overflow are likely to be accompanied by strong winds that create rapid and direct currents of the water in the lake, so that the method of protection by sewage treatment fails at those times when it is most needed.

The term "sewage purification" has been frequently used to cover methods of sewage treatment that only partially purify and that do not yield satisfactory effluents, considered from a sanitary standpoint. For example, it has been applied to screening, to sedimentation, to septic tanks, to chemical precipitation, to the use of contact beds, etc., processes which are often of great merit in their proper field, but which do not by any means convert sewage into drinking water, or into a liquid that can be safely mixed with drinking water. The misuse of the term "sewage purification" has thus led laymen to the belief that a lake water could be protected simply by "purifying" the sewage. The more recent use of the term "sewage treatment" instead of "sewage purification" should help to disabuse the mind of the public in this regard.

Treatment of the sewage of lake cities is often desirable in order to prevent objectionable conditions in the lake water near the point of discharge, and some form of treatment is likely to be adopted by nearly all of them. The nature of the treatment required will be usually governed by conditions other than the protection of the water supply. These treatments will, at the same time, somewhat reduce the danger of the pollution of the water supplies and will serve as an additional factor of safety. The point here emphasized is that they are not in themselves sufficient to protect the water supplies.

The disinfection of the sewage by the use of chloride of lime has been suggested, and if this could be carried out thoroughly the safety of the sewage effluent would be materially enhanced. The cost of disinfecting sewage, however, would be much greater than the cost of disinfecting the water supply, so that, if disinfection were to be depended upon, the latter would naturally be preferred. The difficulty of disinfecting the overflow sewage at times of storm is

another very great objection to this method. Used in connection with other forms of sewage treatment, disinfection would further increase the factor of safety, but it ought not to be depended upon alone to protect the lake water supplies.

Disinfection of Lake Water

If Nature's method of purification cannot be depended upon, if in the present state of the art adequate purification of all the sewage is impossible of attainment, and if a partial treatment of the sewage does not suffice, the only course left is to purify the water supply itself. Fortunately this can be done satisfactorily and at reasonable cost. There are two methods of purification available for lake waters at the present time—disinfection and filtration.

The disinfection of the lake water supplies has been extensively practiced during the last few years. Among the larger cities where it has been used may be mentioned Toronto, Milwaukee, Cleveland, Erie and Niagara Falls. Chloride of lime, or bleaching powder, has been chiefly used, but at Cleveland liquid chlorine was tried.

The fact that the lake waters contain relatively small amounts of organic matter as compared with other surface waters enables disinfection to be accomplished by the use of small quantities of chemicals. For the same reason, the use of an excess of chemicals is readily noticed by the consumers on account of the disagreeable odor of chloride of lime that persists until the water reaches the service taps. Great caution is, therefore, required in the use of this method. If too little bleaching powder solution is added, the disinfection will not be effective, while if too much is added the water will have a bad odor. The quantities of bleaching powder used have varied from 6 to 18 pounds per million gallons. (10 pounds of calcium hypochlorite, containing 35 per cent of available chlorine, per million gallons of water is equivalent to 0.42 parts per million of available chlorine.) Generally, the smallest quantity found necessary to give effective sterilization of the clear lake water has been 6 to 8 pounds per million gallons. Quantities larger than 10 pounds commonly leave undecomposed hypochlorites in the water that may be detected by the consumers.

It is of the greatest importance to secure a prompt and intimate mixture of the

bleaching powder solution with the water. This is not as easily accomplished as many think, and requires a degree of skill in operation not easily obtained in practice. Failure to properly apply the chemical may easily escape knowledge of the authorities, and such failure may be calamitous in its results.

That the use of bleaching powder as a disinfectant of raw water has reduced the typhoid fever death-rates in many places is probable, but its use has not been continued long enough to enable this to be measured with great certainty. That it does not completely protect against water-borne diseases is also probable. Thus, at Toronto, the water supply was disinfected before the recently constructed filter was put into use. During this period, it is said that the typhoid fever death-rate fell considerably below what it had been when untreated water was supplied; but after the filter was put into operation there was a further reduction of the death-rate, showing that disinfection alone had not furnished complete protection.

The method of disinfection of lake supplies ought to be looked upon, not as a means of permanent protection of the quality of the water, but rather as a temporary or emergency measure. The uncertainties of operation are too great, the chances that not all bacteria are killed are too large, to make this method one to be depended upon solely and permanently. And it is doubtful if the consumers will be long satisfied with water that may at any moment run from the service taps with an odor of chloride of lime. In the case of supplies that are only slightly contaminated, it may be used to reduce still further the chance of infection, and thus, perhaps, postpone the time when filters are required, but such instances are few.

Filtration of Lake Water

The best method of protecting the lake water supplies is to filter the water. This is more efficient than disinfection of the water and is very much cheaper than purification of the sewage.

Disinfection of the water does not remove any turbidity that may be present; filtration does. Disinfection does not remove any odor that may be present due to algæ; filtration, with aeration, does this, and while it is not often a matter of great

moment, at times it may be of decided benefit. Therefore, although filtration costs more than disinfection, it gives more effective service and is more dependable.

Two methods of filtration are in use in the lake cities, sand filtration and mechanical filtration. These are now so well known that they do not need to be described. Suffice it to say that sand filters are operated at relatively low rates, say from two to six million gallons per day, and that mechanical filters employ a rate of about 125 million gallons per day. Sulphate of alumina, or some other coagulant, is employed with mechanical filters.

The choice of the two systems should be determined for each case according to the character of the water to be filtered, the availability of filter sites at proper elevation and other local conditions. Generally speaking, sand filters are especially applicable to relatively clear waters and mechanical filters to waters that are turbid for a considerable portion of the time. In general, practice has followed this classification. Mechanical filters have been used by a number of the cities on the south shore of Lake Erie, as, for example, Lorain, Elyria, Vermillion, Sandusky, Conneaut and Ashtabula. Here the intakes are rather near the shore and the water is somewhat turbid. A mechanical filter is now being designed for Evanston for the same reason, namely, that the shore water is turbid. At Toronto, on the other hand, where the turbidity is seldom high, a sand filter has been recently constructed, and is now in operation. In a few instances, mechanical filters have been installed to purify relatively clear lake waters, namely, at Niagara Falls, on the Niagara River, and at Burlington, Vt., on Lake Champlain. Such filters are at a disadvantage from the standpoint of operation in that the attendant cannot as readily tell how the filter is working, for the reason that there is little difference in the appearance of the water before and after filtration. In the case of turbid or colored water, this difference is conspicuous, and failure to obtain perfect clarification is an indication of poor efficiency. The possibility of using bleaching powder as a supplement to filtration has materially widened the field of application of mechanical filters. It has been found that the quantity of alum necessary to be used with a mechanical filter operating on

a clear water cannot be reduced much below $\frac{3}{4}$ grain per gallon without impairing the bacterial efficiency.

With clear lake waters the rate of sand filtration may be higher than in the case of other surface waters. The Toronto filter, for example, was designed for a rate of 6,000,000 gallons per acre per day, and when operated at this rate satisfactory bacterial efficiencies have been obtained.

Although sand filters cost somewhat more to construct than mechanical filters, this difference is not great and their cost of operation is less, so that, when interest charges, operation and depreciation are all taken into account, the cost of the sand filtration may be less than that of mechanical filtration, while, on the whole, the results are more dependable, as less skill is required in operation. Good results, however, can be obtained by either method. Both mechanical filters and sand filters need to be faithfully operated and enlarged when necessary, in order that their capacity may not be overtaxed. Failure to do so may involve serious trouble.

In order to furnish an additional safeguard against infection of the water, it is becoming customary to provide for the disinfection of the water after filtration, so that if for any reason the process of filtration has to be suspended, or if the bacterial efficiency falls below what it should be, hypochlorite may be used.

With the water supply filtered, expensive treatment of the sewage discharged into the lake is usually unnecessary. In fact, in some cases no purification may be required so far as the protection of the water supply is concerned. Treatment of the sewage, of course, gives an additional factor of safety.

The problem of protecting the water supplies of the lake cities is primarily and distinctly a local one. Each city is guilty of polluting its own water supply and each city is innocent of polluting the water supplies of its neighbors. There are, perhaps, a few minor exceptions, and these are chiefly on the streams connecting the lakes.

Each city also has the remedy in its own hands, namely, the purification of its own water supply. With the art of water purification so fully developed as it is, no lake city can afford not to adopt this safe and reliable method of protecting its citizens against the disease and death that lurk in sewage-contaminated water supply.

ROADS & PAVEMENTS

Photographs and data are requested for possible use in this department, from municipal officials, city or county engineers, road superintendents, manufacturers or others having interesting information on subjects relating to roads and pavements.

Better Road Surfaces

By W. W. Crosby

Consulting Engineer, Baltimore, Md.

SOME one has said that, next to the inventors of the alphabet and the printing press, the greatest benefactors of mankind have been those who improved the means of communication. However true a literal interpretation of the remark may be, it is nevertheless an indication of the tremendous importance of suitable roads to all civilized people.

The necessity for constructed and maintained road surfaces is generally self-evident. Fortunate indeed are those rare localities from whose natural earth can be made a suitable road surface *in situ*. But even these do not go without the need for maintenance. The problems of road surfaces are: (a) to determine accurately what sort of a surface will answer the needs of a locality; (b) to prescribe and to execute the construction of such efficiently; and (c) to arrange for its suitable and economical maintenance after construction.

The first problem (a) above mentioned is perhaps the most difficult and important one of the three. The solution of it is affected seriously by consideration of the other two. Upon its proper solution depend the satisfaction of the road users and of its cost sharers, the facts as to whether the results are really an investment or simply an expense or extravagance to the community—in short, whether the work done is a good thing or not. Too much study, therefore, of all the facts connected with this problem can scarcely be given to it before a decision is reached, and we therefore may consider some such here.

No two sets of local conditions are at all likely to be identical. One road may run

north, another east. One may be over sandy or gravelly earth, another over marsh or clay. On one flint may be the only available metal; on another, limestone; on another, even gravel. One road may be subjected to scarcely any motor traffic nor seem likely to be for a long period. Another may support constant and heavy motor, as well as horse-drawn, traffic. It is evident, therefore, that hope for a panacea is vain.

Relation of First Cost to Maintenance

Were the cost—both in the long run as well as at first—to be omitted from consideration, the problem would be far simpler and much easier of demonstration. Then we might be content perhaps to err on the safe side and build what is now generally admitted to be the most gratifying surface. But the engineering responsibility for efficiency precludes the omission of cost considerations, and neglect to give such their true weight in the equation would only too often bring disaster. Therefore we must endeavor to be economical in our improvements of the road surfaces, but in so doing exercise *true* economy. The first cost is by no means the only expense. Frequently it may prove to be the smaller fraction of the whole, and the after-maintenance costs to far outweigh it. The situation can readily be seen in the cases where a macadam surface, costing perhaps \$1.25 per square yard and requiring under the traffic relaying once a year, is compared to an asphalt pavement under the same conditions, costing \$2 and requiring resurfacing only, at a cost of, say, \$1.50 once in ten



A DORCHESTER COUNTY STATE ROAD ON THE EASTERN SHORE OF MARYLAND

Oyster-shell macadam surface treated with a pitch compound

years. The macadam after twenty years would have cost \$25; the asphalt, \$5—or at most, including an annual maintenance charge of 10 cents per square yard, \$7.

We are forced, therefore, to give due consideration to this important factor of cost in the selection of the particular type of construction to be followed, and necessarily careful study of traffic and other conditions should be had, bearing always in mind that road improvement may be expected always to result in increased traffic and strains on the surface.

In this connection, it is important to remember the wonderful development, in a remarkably short time, of the motor car for various purposes and to consider that probably this development has little more than just begun. The character of a road surface satisfactory for motor traffic is quite different from that suitable for horse-drawn traffic, and the relative importance of each class—or rather the relation likely to exist on the average during the probable life of a road surface—must be carefully weighed in making a selection.



A STATE ROAD IN WICOMICO COUNTY, ON THE EASTERN SHORE OF MARYLAND

Broken-stone macadam surface treated with a pitch compound

Motor Traffic Not Destructive of All Surfaces

An impression seems abroad to the effect that motor traffic is exceptionally destructive to all road surfaces, but while this may be the case generally with those surfaces designed primarily for horse-drawn traffic, it does not seem to the writer to be at all true where the surfaces were properly designed for motor traffic itself. On the contrary, in these latter cases, the worst enemy of such surfaces seems to be the shod feet of animals drawing loads; and were such traffic excluded from these roads, the maintenance costs would probably be reduced to almost nothing per annum.

A combination of motor and animal traffic seems to create the most difficulties in the way of proper design or selection of a good road crust and to require usually the largest expense for maintenance. However, it is this combined traffic that in the far larger number of cases must be expected, and for which a solution will be required.

The addition of the motor vehicle, with its greater radius of action, to the vehicular means of communication certainly increases the importance of having the longer main roads improved for its satisfactory use. Its greater capacity for speed renders smoother surfaces necessary, and also accentuates the danger of sharp turns and obstacles, permanent or temporary, in its path. (Perhaps this suggests an increased objection to any surface that, under such traffic, will require too frequently serious repairs with their cluttering up of large portions of the roadway, their barriers, etc.)

The susceptibility of the motor vehicle to shocks from inequalities or defects in the road surfaces (even when proceeding at moderate speeds) makes necessary smoother surfaces than were acceptable to horse-drawn traffic and greater care in repairs and maintenance work. And the distribution of the road dust by the motor at last calls in a commanding way general attention to a previously existing defect of most old crusts—the existence of a condition of the surface which was unquestionably a source of serious injury to public comfort and health. Unconscious of this state of affairs as we may formerly have been, it nevertheless existed, and we owe

a debt to the motor for awakening public interest in dust suppression.

With the above consideration of the problem *a* referred to, we must not lose sight of the other two important ones. In *b* the efficiency of the prescription and execution of the construction, and in *c* the suitable and economical maintenance of the results, all are—or should be—interested and alert.

Waste or loss of the earlier work under *a* will surely occur if *b* and *c* are not properly attended to; and such waste or loss would be shared by everyone in some way. Reference has been earlier made to the dependence of the proper solution of *a* on *b* and *c*. In illustration let us consider how *c*—the maintenance—may affect *a* and *b*. For instance, if it is probable that sufficient constant and proper maintenance will, for any reason, be lacking or difficult to secure, it can readily be seen why more permanency in form of construction will be demanded.

How Wide a Strip Should Be Improved?

Increase in permanency of form of construction results in decrease of maintenance expenditures, and, considering any probable increase in traffic and its resulting strains on the crust, is in many cases therefore likely—up to a certain point at least—to prove the more economical way in the end. A strip of crust only wide enough to care properly for a single line of traffic may at first require the least cost. But if the improvement of the road to this extent—as frequently, if not almost always, happens—increases the amount of traffic to a double line, then the restoration and maintenance of the earth shoulders or margins will rapidly mount to such figures as, when separately recorded for a period, will be seen to be sufficient to have more than covered the interest on the investment for a wider crust and its proper maintenance. The same may be said as to thickness of the crusts, their width and, in general, as to their character.

Some four or five years ago the writer was about to resurface an old road with fairly heavy traffic. He believed that the new surface should not be less than 32 feet wide, because of the increase in traffic probable from the betterment of the surface. The authorities, however, stood ap-

parently aghast at the expense involved, and reduced the width of the plans to 24 feet. To-day the general remark to be heard is "The surface, so far as it goes, is ideal, but what a shame it is that they didn't make it wider." The records show, too, that while the improved surface is requiring but about one-half of a cent per square yard per year for maintenance, the earth margin is requiring about two cents per square yard. The improved surface originally cost on the average about 50 cents per square yard. Considering, therefore, public convenience and satisfaction, as well as interest charges and maintenance, the wisdom of establishing the narrower width in the first place is not now

clear, and undoubtedly will soon be disproved when the constant increase of traffic shall have reached a certain figure.

In this connection it may be well for designers of roads and streets to consider that, where formerly a single line of traffic could safely be figured as occupying 7 or 8 feet of width, now, in view largely of the greater average speed of the traffic, a safe standard for this width will be 9 or 10 feet; and multiples of the latter figure, rather than of the prior, should be used in estimating the widths necessary.

It is the writer's experience that the general public is ultimately better satisfied to pay a high price for a good, lasting road than for a low-priced inferior substitute.

The Road Builder's Assistant

By Arthur La Motte

DYNAMITE has often been called, more or less humorously, the farmer's extra hired man, although it has only comparatively recently come into this title. Road builders are also beginning to find that dynamite is an exceedingly efficient assistant.

The farmer, at first, was willing to admit that dynamite might be useful for removing boulders and stumps. After fuller acquaintance, he allowed that it could dig ditches, plow ground, dig holes for planting trees, drain swampy spots, break up impermeable sub-soil, and make itself useful in a number of other ways.

Road builders also have known for years that dynamite is necessary for making rock cuts and blasting rock ledges for crushers, but many of them to-day do not consider it worth while to have any dynamite around, unless they are working in solid rock. However, it is the purpose of this article to point out a few other places where dynamite may be used to advantage by road builders.

In going through a cut in loose, sandy soil, it helps in loosening up the dirt if charges of a half cartridge of 20 per cent dynamite are fired in holes 2 or 3 feet deep, 5 or 6 feet apart, each way. Then the scrapers can handle it with ease, doing away with a great amount of hand picking and shoveling. In a hard clay soil, charges of one to two 20 per cent cartridges may be used in holes 4 to 6 feet deep, and spaced about 6

feet apart, and will be found satisfactory for loosening the soil for the scrapers; although if fired in a loose, sandy soil, such deep holes might result in miring the horses and mules. It does not require a power drill to make the holes. A piece of 1¾-inch octagon steel, pointed at one end, may be driven down by sledge hammers to the required depth, pounded loose and removed in very little time.

Out-crops of rock are frequently met with in road construction, and, of course, require to be drilled either by hand or machine drill for the economical use of explosives. Where it is not possible to drill these out-crops, they may sometimes be mud capped, but this takes about ten times as much dynamite to do the work under most favorable conditions as compared with that required in a drill hole, and frequently it is absolutely impracticable. Boulders may sometimes be blasted by firing charges in holes driven beneath them with a bar, on they may be drilled and fired, or, if very hard and brittle, it is most economical to mud cap them.

Stumps may be taken out economically and quickly by firing charges of 40 per cent dynamite under them, placed far enough below the surface of the ground so that the crater produced will include the greatest proportion of the roots. The charge should be put in the earth under the stump, rather than in the wood itself; except that with stumps having large tap roots, the explosive

should be placed either directly in the tap root or on either side of it and about 2 feet beneath the surface of the ground. Do not try to mud cap the stump, or to get the explosive down into the center of a rotten stump. This splits and spreads it apart, but makes the final extraction of the roots a difficult problem.

Ditching is frequently necessary and may be done in two ways, depending on the character of the soil. In a dry, sandy soil, single 40 per cent cartridges are placed in holes 2 to 3 feet apart and 2 to 2½ feet deep, with an electric fuse in each hole, and the whole line connected up in series and fired with a blasting machine. In very wet, heavy soil or swampy muck, the ditch may be made by firing charges of one cartridge of 60 per cent straight dynamite in each hole spaced 18 inches apart and 2 to 2½ feet deep. In this case it is not necessary to use an electric fuse for each hole. One extra cartridge placed in a hole near the center of the line of holes and fired by either an electric fuse or a blasting cap will detonate the entire line by influence. Ditches have been dug over 1,000 feet long by this method. A hand dug ditch usually costs just about twice as much as a dynamited ditch.

Sink-holes, mud holes, bogs and miry spots in low-lying portions of country roads



BLAST ALONG DU PONT ROAD,
GEORGETOWN, DEL.

are often effectually and permanently drained by firing two or three cartridges of 20 per cent dynamite in holes driven down into the impervious stratum of soil—usually clay or hard-pan—which forms the basin and prevents the water from running down into the earth. These charges should be fired 15 or 20 feet apart each way, the depth depending upon the nature of the soil. Wet spots in roads have been permanently cured at very little expense by this method.



MIDVALE ROAD, PASSAIC COUNTY, N. J., DURING CONSTRUCTION, SHOWING
STRAIGHTENING AND CUTTING DOWN. OLD ROAD AT THE LEFT



Illuminating engineers, commercial and civic organizations, manufacturers and others having valuable information on street lighting are invited to submit photographs and data for possible use in this department

A Method of Replacing Arc Lamps with Tungstens

To the Editor of THE AMERICAN CITY:

In your February number I have read with interest the article by Frank Koester, in which the illumination of streets by means of elevated arc lamps is advocated. Here in Redwood City we have recently substituted tungsten lamps for arc lamps in our street lighting system, and find the new method of illumination much more satisfactory.

I appreciate the fact, of course, that conditions in Redwood City are very different from those pictured by Mr. Koester as prevailing in German cities having a considerable density of population. It has been our experience, however, that most arc lamps not only lack carrying power, but are also more trying on the eyes because of a peculiar flatness, or deadness, or whatever fault it is, that illuminating engineers do or do not understand.

Our original arc system in Redwood City was built with 30-foot and 35-foot poles, and on these same poles we placed our 100-watt tungsten lamps when we made over the system. We find that this height, for tungsten lamps of this capacity, is just about right for economical and efficient lighting, where we have to take care of a large territory of somewhat scattered population.

Your readers may be interested in the method by which we replaced our arc lamps with tungstens. What we did can be done by any city anywhere, so far as I can see. Our first experiment for this purpose was

made about three years ago, when I advised the town trustees to replace one of our 500-watt arc lamps with five 100-watt tungsten lamps in multiple. With each arc lamp we had a 500-watt transformer, so that in replacing the arcs with tungsten lamps we had merely to run secondary leads from each transformer to the tungsten lamps. By putting the lamps on every other pole or on every third pole, we are able to illuminate for a distance of 900 to 1,300 feet on each street with the same current that was formerly used for the illumination of a single crossing by an arc lamp. Everything considered—effectiveness, softness of light, etc.—our experience indicates that one 100-watt tungsten lamp is about as good as a 500-watt arc.

When we undertook our first experiment it was feared that the tungsten filaments were too fragile for this purpose, but I argued that with large lamps and with constant improvement being made in perfecting the strength of filaments, the experiment was worth trying. Some of the tungsten lamps that we installed at that time burned for eighteen months.

The entire street lighting system of Redwood City has now been made over in this manner. We have not had experience with the series system of tungsten installation using tub transformers, but I do not see how that system can be an improvement on our present system in the matter of service. In the matter of cost, we have saved a large amount by using our old transformers,

which we did not have to replace or even move from the positions where they were placed for the old arc service.

Owning our own street lighting system, we buy current at wholesale prices, delivered at our switchboard, paying from $2\frac{1}{2}$ cents per kilowatt hour down. To operate 340 100-watt lamps on an all-night service, to light the town hall, public library and three fire houses, and to charge the batteries of the fire-alarm system, costs us on

the average \$125 a month for current and about \$20 a month for replacing lamps. As compared with the old arc service, we are now lighting our streets all night instead of half the night; we get at least twice, if not three or four times, the lighting efficiency in distribution, and the total cost is not more than half what it was before.

GEO. A. MERRILL,
President Board of Trustees.

Redwood City, Cal.

A Plan for Interesting Children in Civic Betterment

"What can the children of Montpelier schools do to make Montpelier a cleaner, more wholesome and, therefore, better city in which to live?"

This was the topic for discussion at a most interesting meeting held in the City Hall auditorium of Montpelier, Vt., on February 28. It was attended by nearly 1,000 children from the schools of the city, who gathered for the purpose at the invitation of Mayor James B. Estee. The meeting was the outcome of a plan inaugurated by Mayor Estee some months previously, the principal features of which are outlined in the following extracts from a letter written by him to the Governor of the state, Allen M. Fletcher:

"To my mind, the public school system of America, from its foundation in the primary departments to its completed forms in the higher institutions of learning, is the most important instrumentality through which the unfoldment of the faculties and the development of the powers of expression leading to true and high grade of citizenship are to be approached.

"So believing, I have endeavored for some years in such ways as I could, and especially during the past year in my capacity as Mayor of this city, to enlist the interests of the children of the public and parochial schools and the young men and women of Montpelier Seminary in practical, everyday questions pertaining to good citizenship and efficient and economic city administration. To that end I have visited the various schools of our city and addressed the pupils of the different grades upon several phases of this great question, which, in my thought, relates itself with the utmost nicety to the problems of the public school; and I have happily found ready acceptance of this idea on the part of those in authority in our schools and a like pleasant reception by the pupils themselves.

"I have, in pursuance of this thought, arranged to give certain cash prizes for essays written by the school children upon the subject of 'What can I do to make Montpelier a cleaner, more wholesome and, therefore, better city in which to live?'

"In response to this proposal there have been presented to me as Mayor of this city something like three hundred essays prepared by the children of the various schools of our municipality and accompanied by letters of transmissal addressed to the Mayor and City Council, the governing board of the city. Among these will be selected eight, the writers of which will receive cash prizes.

"In addition to writing an essay upon the subject above indicated, it is arranged that representatives of the three schools in the city shall be chosen, by some method to be adopted by each school, to appear on the platform of the City Hall to deliver brief addresses—orations if you will—upon the general theme of 'What the pupils attending the schools of the city can do to assist the municipal government in securing and maintaining a clean and well-ordered administration of city affairs.' To be chosen as representative of their respective schools will be the honor in this feature of the campaign, as the cash prize is in the matter of the essays upon the subject under review."

Governor Fletcher acted as one of the three judges in the contest, the other two being President Charles H. Spooner, of Norwich University, and President Guy Potter Benton, of the University of Vermont. In addition to the prizes for the essays, there was also an award to the pupil who, in the opinion of the judges, had done most in the way of actual work during the previous two months in aid to the Mayor, City Council and heads of the municipal departments.

Varied Uses of Motor Trucks by Municipalities, Contractors and Public Utility Corporations



MACK AUTOMATIC DUMP TRUCK USED IN HOBOKEN, N. J., FOR ROAD CONSTRUCTION
AND MAINTENANCE



TYPE OF AUTOCAR USED FOR STREET SPRINKLING IN TAMPA AND PENSACOLA, FLA.



GARFORD MOTOR TRUCK, MODEL T, USED FOR STREET LIGHTING WORK



KISSEL KARS USED BY THE MILWAUKEE WATER WORKS DEPARTMENT



G. M. C. TRUCK USED AS A DOG WAGON BY THE DETROIT POLICE DEPARTMENT

(To be continued in future issues)

The New York Subway Contracts

By Delos F. Wilcox, Ph. [D.]

ON March 19, 1913, several years of negotiation between the city of New York and its two principal rapid transit companies were brought to a close by the execution of subway contracts and elevated railroad certificates involving the investment of about \$325,000,000 of new capital in rapid transit lines.

The partnership scheme finally worked out between the city and the companies is known as the "Dual Plan," because by it the city gives up the idea of developing its subways as a single operating system with a single fare, and apportions the new subways to the two rapid transit companies, giving both of them facilities to distribute their passengers through the business district south of Fifty-ninth Street in the Borough of Manhattan.

The theory of the Dual Plan is that the new lines shall be hooked up with the existing lines, so that rapid transit facilities may be developed to their full capacity with the smallest possible expenditure of capital. There will be three systems of rapid transit, each operated on a separate five-cent fare basis without transfers to the others or to the surface lines. It is thought, however, that the routes are so arranged as to make it possible for a much greater number of people to complete their journeys for a single fare than can now do so.

Briefly, the Interborough Rapid Transit Company, which now operates the elevated railway system of old New York (Manhattan and the Bronx) and the present subway, each of which carries about 300,000,000 passengers a year, will continue to operate the two systems as enlarged, while the Brooklyn Rapid Transit Company will operate the existing elevated railroad system of Brooklyn as enlarged in connection with a system of new subways.

The elevated railroads of Manhattan and the Bronx, representing a present investment of about \$100,000,000, are to be third-tracked and extended at an expense of about \$25,000,000, all of which is to be furnished by the company. These improvements will probably increase the capacity of the system to 450,000,000 passengers a year. The new franchises run for 85 years,

but are indeterminate after the first ten years. The city is to get one-half of the increase in the net profits of this system, after 6 per cent on the new capital has been allowed for interest and sinking fund charges.

The present subway represents a total investment of about \$100,000,000, of which the city furnished somewhat more than half, and for which it receives a preferential rental sufficient to carry and amortize its contribution. To this subway are to be added new lines at a cost of about \$140,000,000, of which the city furnishes about \$63,000,000 and the company \$77,000,000. The receipts of the new and the old lines will be pooled, and out of them will be paid, first, the city's rental on the present subway; second, operating expenses; third, the company's present net profits fixed at \$6,335,000 a year; fourth, 6 per cent on the new capital furnished by the company; fifth, 8.76 per cent on the new capital furnished by the city, and lastly, the net profits divided half and half between the city and the company. The operating contract is for 49 years from January 1, 1917, at the end of which time the subways with their equipment will come into possession of the city without further payment, except for the equipment of the present subway and for such additions to the new subways as may not have been fully amortized at that time. The enlarged Interborough subway system will have a capacity of about 750,000,000 or 800,000,000 passengers per annum on the basis of the same degree of congestion that now prevails in the present subway.

The Brooklyn elevated lines represent an investment of about \$50,000,000. Their extensions and improvements will cost about \$20,000,000, all of which is to be furnished by the company, a part under 85-year indeterminate franchises and a part under existing perpetual franchises. With the elevated lines will be operated new subways costing about \$140,000,000, of which the city furnishes \$100,000,000. The financial terms have been worked out on the same general basis as in the Interborough contract, except that the city has nothing corresponding to the first preferential for

rental of the existing subway and except that the company's fixed preferential is only \$3,500,000 a year. The Brooklyn elevated lines now have an effective capacity of hardly 200,000,000 passengers. The enlarged Brooklyn elevated and subway system will probably be able to carry about as many as the enlarged Interborough subway.

Under both subway contracts title to the subways and their equipment vests immediately in the city, and possession comes at the end of 1965, or sooner if the leases are terminated and the companies paid off. This recapture feature does not apply to the old subway or to the existing Brooklyn elevated lines, so that the actual use of the in-

determinate feature of the franchises would in either case involve the dismemberment of an operating system.

Three fundamentally progressive principles are embodied in these contracts: (1) The indeterminate franchise; (2) the amortization of the entire cost within a fixed period; (3) the right of the city to build extensions and compel the companies to operate them on fair terms.

Whether the financial terms of the partnership are such as to give these principles any practical value in the future was the principal bone of contention before the contracts were signed. Now, the question is with the future, on the lap of the gods.

Municipal and Civic Publications

Copies may be ordered of THE AMERICAN CITY

PRENDERGAST, WILLIAM A., Comptroller of the City of New York.

Report Submitting Plan of Proposed System for the Central Purchase and Distribution of Supplies for the City of New York. March 15, 1913. 72 pp. Diagrams and tables. **Free**

Containing all the forms necessary to carry the proposed system into full operation and effect. The plan has been developed from the system of the Canadian Pacific Railway Company. It does not contemplate the elimination of any of the departmental purchasing agents. It contemplates charter amendments to permit the creation of a department of purchase, headed by a board of purchase consisting of the Mayor, the Comptroller and the President of the Board of Aldermen; also the appointment of a general purchasing agent and a general city storekeeper. The heads of the eighteen largest purchasing departments in the city would be given supervision over every act of the general purchasing agent.

NATIONAL HOUSING ASSOCIATION.

Housing Problems in America. Proceedings of the Second National Conference on Housing, Philadelphia, December 4-6, 1912. 1913. xiii + 354 pp. **\$2.00**

The Conference reported in this volume was attended by 337 delegates representing 76 cities and 23 American states and Canadian provinces. Among the delegates were health officers, architects, builders, social workers, manufacturers, etc., all of whom are interested in one phase or another of the housing problem, and many of whom took part in the discussion which followed the presentation of the papers. They also made two inspections of housing conditions in Philadelphia, and at one of the meetings commented upon what they had seen there to condemn and to admire. The principal address was delivered by the Rt. Hon. James Bryce, British Ambassador to the United States, who spoke of the work being done both in England and in America, and brought out forcibly the menace of our great cities. This volume is a valuable contribution to the record of the housing movement in America.

COULTER, ERNEST K., formerly Clerk of the Children's Court, New York; founder of the Big Brother Movement.

The Children in the Shadow. (Introduction by Jacob A. Riis.) 1913. xvii + 277 pp. Illustrated. **\$1.65**

"This is the story of the three delinquents, the child, the parent and the community, as it comes from the new, but greatest, social clinics in the world, the Children's Courts." The most guilty of the three is the community, for it is responsible for the environment that helps to produce delinquent parents and children. In this volume are to be found the author's observations of an awakening social conscience toward the great wrongs and inequalities with which the Children's Courts have to deal.

THE CENTRAL ASSOCIATION OF COMMERCIAL SECRETARIES.

Proceedings of the Fourth Annual Convention of the Association, Indianapolis, Ind., September 20-21, 1912. 1913. 71 pp. **50 cents**

This is more than the minutes of a meeting. It contains talks between commercial secretaries on their mistakes; direct criticisms on some commercial club methods, and papers on various municipal questions, such as the street railway problem, the commission form of government, the mayor's cabinet, etc., besides a discussion of the relation between commercial and agricultural development.

UNIVERSITY OF WISCONSIN, EXTENSION DIVISION.

The Community Institute. January, 1913. 14 pp. **Free**

Stating the plan and the purpose of the "community institutes" organized by the Department of General Information and Welfare of the University Extension Division of the University of Wisconsin. The plan is to combine the resources of the city or town in which the institute is held with the expert advice, direction and inspiration of the University. A number of suggestive programs for such institutes are given, each treating not more than two subjects.

DEARHOLT, HOYT E., M. D.

Guarding the Public Health. (Bulletin of the University of Wisconsin.) January, 1913. 13 pp. 5 cents

The paper here published was read before the Wisconsin State Medical Society in May, 1912. It is a plea to the medical profession to take definite action to secure better care of public health.

RUSSELL SAGE FOUNDATION.

Department of Recreation. Information About its Field, Publications and Methods of Coöperation. February, 1913. 29 pp. 15 cents

The statement of activities includes a list of lantern slides by subjects and information about loaning them.

Some Important Works on Municipal Law

MCQUILLIN, EUGENE, of the St. Louis Bar, Judge of the Eighth Judicial Circuit.

Municipal Corporations.

1912-1913. 6 vols.

\$39.00

This exhaustive treatise, covering the rights, duties and liabilities of cities, villages, townships, counties and all public corporations, has been in preparation for the last fifteen years, and is eminently a practical work from every point of view. It is so prepared as to render available the rule of law, tersely stated, on every proposition that has been determined by the courts, and shows clearly the essential facts to which the legal principle has been applied. The numerous judicial decisions dealing with every phase of municipal corporation law have been studied, analyzed and compared, and the principles deduced therefrom, together with the reasons supporting them, wrought into text and notes in a form which will prove most convenient and easily accessible. Speaking in the broadest sense possible, the work covers every phase of municipal corporation law, and embraces all the latest decisions of the courts. There will be 200,000 citations. Among the leading topics thoroughly treated may be mentioned: Legislative control of municipal corporations; the municipal charter; municipal offices and officers and municipal departments; municipal ordinances; public utilities; public improvements of every nature, including special taxation and local assessments; power of municipal corporations; municipal bonds, warrants, and municipal indebtedness; public service corporations, municipal liability for torts; municipal liability for defective highways. Education, penal institutions, charities and correction, and many other subjects are carefully treated.

DILLON, JOHN F., LL. D., formerly Circuit Judge of the United States for the Eighth Judicial Circuit and Chief Justice of the Supreme Court of Iowa.

The Law of Municipal Corporations. 1911. Fifth edition; thoroughly revised and enlarged from two to five volumes. lxi + 3,802 pp. \$32.50

A monumental work on the subject of municipal corporations, being an exposition and discussion of the principles of the law, designed for the practicing lawyer and of great value to students of municipal government. This new edition brings the treatment of the subject up to the condition of the law at date, and contains more than two and one-half times the matter contained in the fourth edition. More than 40,000 cases are cited. New chapters have been added upon the following subjects: Public Utilities (including discussion of municipal trading and municipal ownership of public utilities, the relations between the city and the grantee of franchises, duties to consumers, regulation of rates, etc.); Constitutional Limitations of Municipal Indebtedness; Special Legislation; and Municipal Warrants. Among the new subjects discussed and treated in connection with the existing text are the following: Freeholders' Charters (under recent constitutional provisions permitting cities to frame their own charters); The Right of Local Self Government; Mandatory Legislation as to Hours of Labor, Wages and Union Labor on Municipal Works; Municipal Pensions; Municipal Civil Service Laws; Regulation of Rates for Supply of Water, Gas, etc. Ordinances exercising the police power have been treated in a separate chapter, and cover regulation of occupations, intoxicating liquors, health ordinances, hospitals, cemeteries, nuisances, markets, fire limits; also regulation of the use and control of

private property, regulation of height of buildings, of signs and billboards, of automobiles, speed of trains, operation of railroads; tenement houses, suppression of the smoke nuisance, removal and disposal of garbage and refuse matter and dead animals, regulation of slaughter houses, stables, etc. The subject of Contracts is treated separately from Municipal Securities. To the subject of Municipal Bonds 230 pages are devoted, and include new sections dealing with the recent development of the law. The author has for years given to municipalities and investors about 200 opinions annually on the validity of municipal bonds. The subjects of Assessments, Taxation, Actions, and Liabilities, *Ex Contractu* and *Ex Delicto*, are fully treated. The fifth volume is given up to the table of cases cited and the index.

MACY, JOHN E., LL. M., Professor of Law, Boston University Law School.

A Selection of Cases on Municipal or Public Corporations. 1911. xiv + 503 pp. \$4.00

A comprehensive work in which the cases and their arrangement represent very careful research in the process of selecting representative cases from those used at various times in the author's classes. An effort has been made to select cases which present the most fundamental principles, and to state the facts of each case so clearly as to make the record of definite value to students.

BEALE, JOSEPH HENRY, Carter Professor of General Jurisprudence in Harvard University.

A Selection of Cases in Municipal Corporations. 1911. xxvii + 686 pp. \$4.00

This volume covers cases under the following heads: The Nature of Municipal Corporations; External Constitution (creation, alteration, dissolution and legislative control); Internal Constitution (organization, legislative and administrative departments, officers); Powers of a Municipal Corporation (general principles, legislative and police power, power to tax, to expend money, to contract, power to acquire, manage and dispose of property); Liability (on contracts and for torts, including general principles of liability, negligence in executing governmental functions, in the performance of municipal and commercial functions); Remedies.

PAGE, WILLIAM HERBERT, of the Columbus, Ohio, Bar, and

JONES, PAUL, of the Columbus, Ohio, Bar.

A Treatise on the Law of Taxation by Local and Special Assessments. 1909. 2 vols. ccxlviii + 2,497 pp.

Including assessments for streets, sidewalks, alleys, sewers and all other city improvements, as well as assessments for all rural improvements, such as roads, ditches, drains, bridges, viaducts, water systems and irrigation. It is a connected statement of the principles of the law of taxation by local and special assessments as established by court decisions. The table of contents is a minute analysis of the subject. Detailed discussion is given of the method by which the public corporations may enforce assessments and the methods whereby the property owner may seek relief. Exhaustive citation of authorities is made, and there are parallel references to other than the official reports. There is a very full index.

CITY PLANNING NEWS

Prize-Winning Plans for Laying Out a Quarter-Section of Urban Land

Awards were made on March 17 of the prizes in the Chicago City Club's competition for a scheme of development of a quarter-section of land in the outskirts of Chicago. As the site proposed was a hypothetical one, and the ideas submitted would be applicable to many growing cities, the following illustrations and descriptions of the prize-winning plans are here published.

This competition (announcement of which appeared in *THE AMERICAN CITY* for January, 1913, page 42) was made possible through a gift of \$600 by Alfred L. Baker, President of the Club, for three prizes of \$300, \$200 and \$100 respectively. The object of the competition was to extend information and awaken public interest concerning the possibility of developing residential neighborhoods in an improved manner in the unbuilt portions of Chicago.

The site proposed was conceived as lying to the northwest or southwest, about 8 miles from the business center, and distant $\frac{1}{2}$ to 4 miles from many of the large industrial plants found in the outer portions of the city. The quarter-section was presumed to be served by street car lines on two sides, by which one could reach the center of the city in about 45 minutes.

Thirty-nine sets of drawings and descriptions were submitted, 21 of which came from Chicago and 18 from outside of Chicago, including one from Sweden. The jury consisted of John C. Kennedy, formerly Secretary of the Housing Committee of the Chicago Association of Commerce, chairman; John W. Alvord, engineer and town planner; Jens Jensen, landscape architect; George W. Maher and A. F. Woltersdorf, architects, all residents of Chicago. By special invitation of the jury, Edward H. Bouton, Director of Roland Park suburb, Baltimore, sat with the jury as a consulting member.

The first prize was awarded to Wilhelm

Bernhard, architect, Chicago; the second prize to Arthur C. Comey, landscape architect, Cambridge, Mass., and the third prize to Albert Lilienberg, head of the City Planning Department of Gothenburg, Sweden, and his wife.

The following descriptions are from the data submitted by the winners of the three prizes:

General Description of the First Prize Plan

The center of the community will be the village square, surrounded by buildings for civic, public and business life. A 34-foot wide archway will serve as the main, architecturally accentuated, entrance to the square. On the east side will be a group of municipal buildings, on the north side buildings for mercantile purposes with an open arcade, and on the west side a club house and library facing the main park and recreation places. The south part of the square will contain an open garden, with a monument in the center. Close to the square, and with easy connection to same, will be the market plaza as center for food supplies.

In the near neighborhood will be located two blocks entirely devoted to shop purposes, with apartments above, a lodge hall, a fire station, theater, garage and livery stable, two schoolhouses and churches. Thus the community center will serve as chief artery for the suburb's civic and business life; a distinct separation between residential and business parts will be made; and the domestic character, which ought to be one of the most notable characteristics of an up-to-date garden city, is obtained. Another chief point in trying to keep a true domestic character must be an endeavor to avoid unnecessary traffic. The monotonous endless business thoroughfares running in a straight line from Chicago proper out through its suburbs, with their never ceasing noise of street cars and heavy wagons, their temptation for speeding to automobilists, are killing every possibility for the quiet, clean, healthy characteristics the name "garden city" suggests.

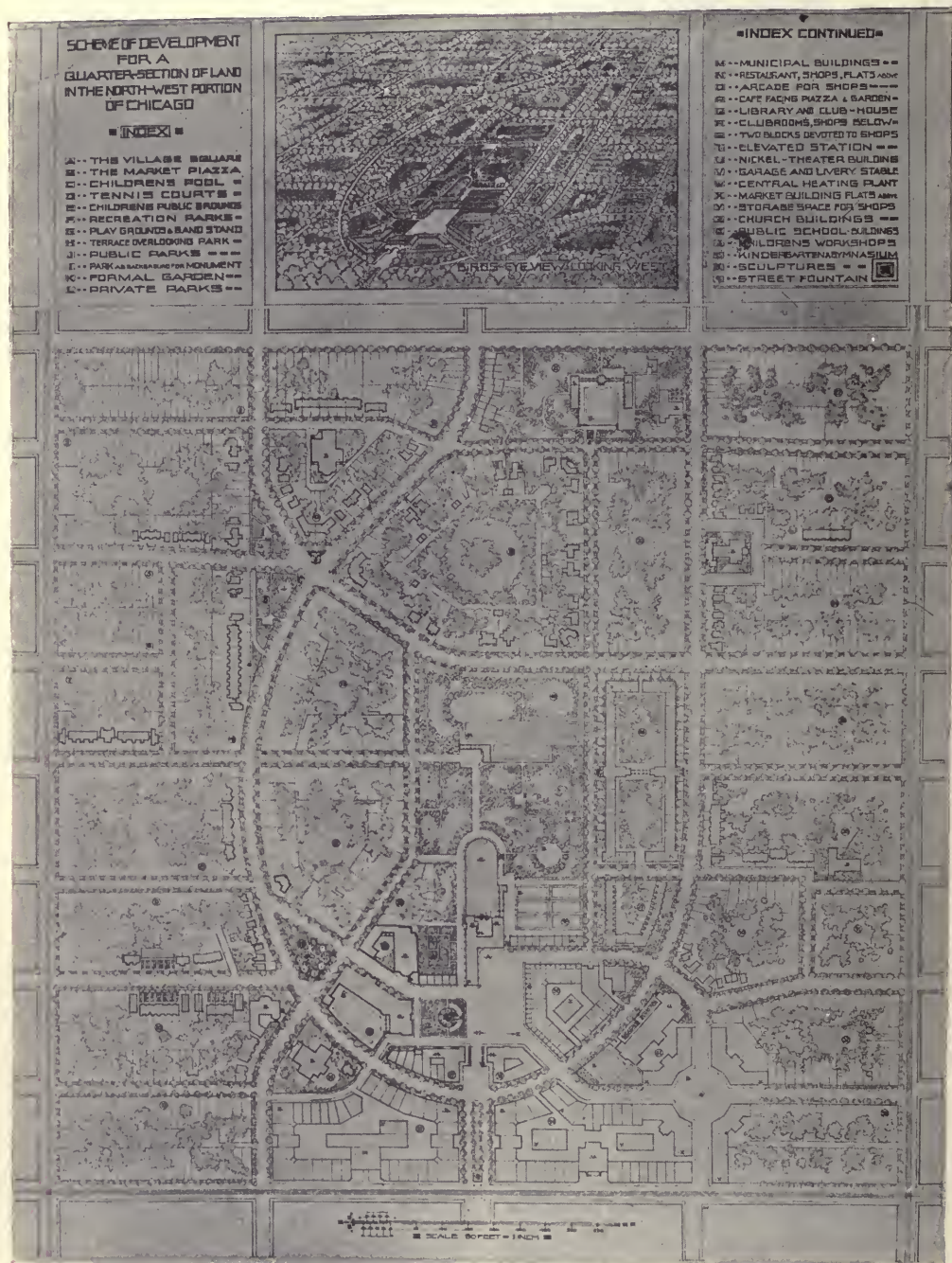
In giving a curved line to the chief streets of this layout, the purpose has been to discourage their use as quick-rush thoroughfares, and from an esthetic viewpoint to break the monotony of straight street lines so predominating in this country.

The two main thoroughfares will cut the tract straight through. Both will have a width

of 60 feet, with ample set-back of buildings, slightly curving when approaching the community center. Streets less important for traffic will be 40 feet wide or less. The additional space thus given to the lots will decrease the public cost for pavement repairs, will increase

the size of the lots, permitting ample space for front gardens as well as back yards.

The sidewalks will all have a width of 5 feet, except in front of stores, where they have been given an additional 5 feet. On the street side of sidewalks there will be, throughout the



FIRST PRIZE PLAN AND PERSPECTIVE, BY WILHELM BERNHARD, ARCHITECT, CHICAGO

entire layout, a grass-covered space 6 feet wide for trees and shrubbery.

The grouping of houses in larger and smaller units, of which some are set back, some brought forward, will avoid the monotony which the street with a straight line of single houses offers, and at the same time will decrease the building costs.

Wherever possible, there has been provision made for a private park in every block. This space will serve not only as ample place for raising vegetables, but also as an ideal playground for small children.

The lots facing the boundary streets, located near the surface car lines, are supposed to be occupied by citizens with moderate income. The lots on the inside of the tracks facing the public park will have a street frontage from 40 feet up to 80 feet, and will naturally be selected by people of better means. This idea,

to provide lots suitable to citizens of different means, has justly been adopted in up-to-date garden cities.

MISCELLANEOUS DATA

The number and sizes in street frontage and superficial area in square feet of lots for dwellings:

| Street frontage... | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 |
|--------------------|-----|-----|-----|----|----|----|----|----|
| Number of lots... | 434 | 396 | 144 | 90 | 44 | 9 | 4 | 4 |

Total number of lots, 1,289; for dwellings, 1,128.
Total superficial area of lots for dwellings (private parks not included), 4,072,900 square feet.

Total number of families in flats, 152.

Total number of families to be accommodated, 1,280.

The number of feet of public sewers proposed, 19,750.

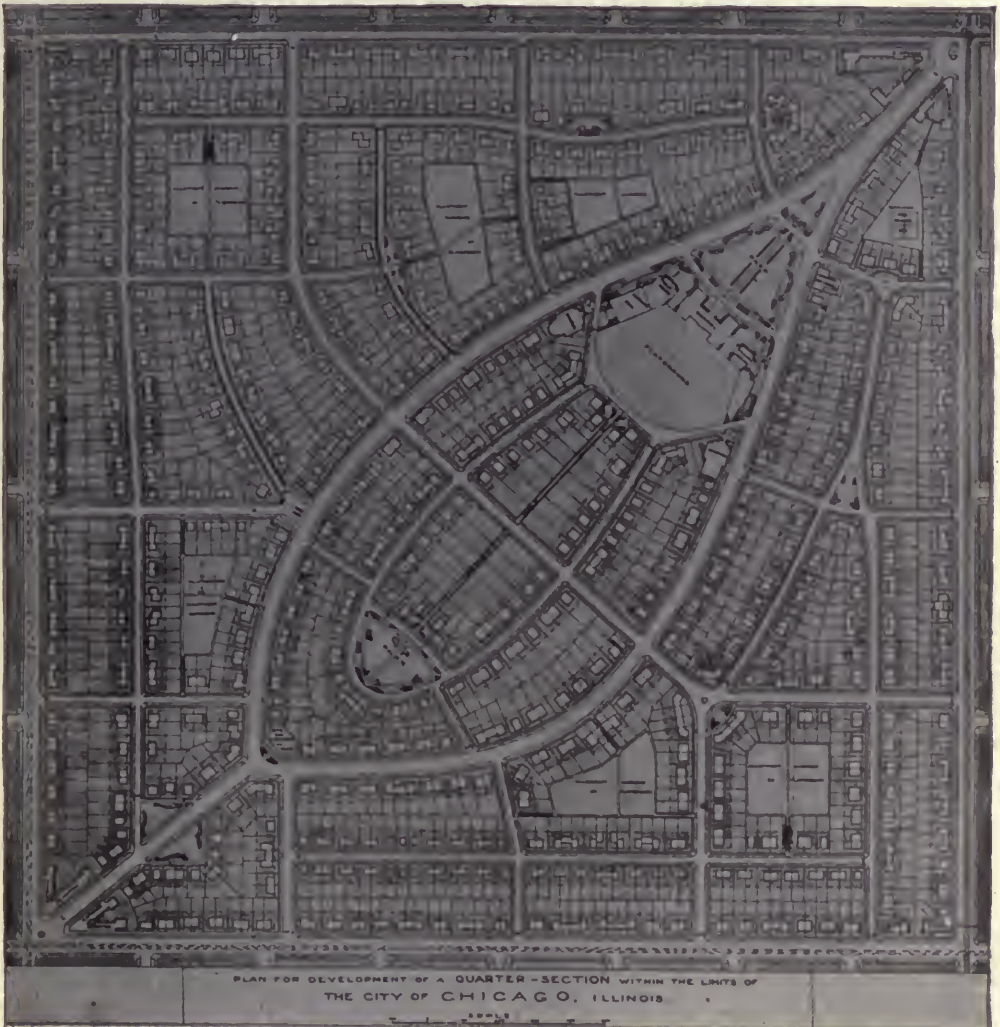
The number of square yards of street pavement, 81,138.

The number of square yards of sidewalk proposed, 31,850.

Percentage of total site in streets, 18%; in other public spaces, 11%; total, 29%.

Approximately 2,000 trees will be planted in streets.

Total number of different kinds of shops, 114; schools, 2; churches, 7; lodge hall, 1; club house and



SECOND PRIZE PLAN, BY ARTHUR C. COMEY, LANDSCAPE ARCHITECT, CAMBRIDGE, MASS.

Proposal Notices

Any city, town or county which places a club subscription for **THE AMERICAN CITY** is entitled to the use of this department without charge for proposal advertisements not exceeding four inches single-column measure. Additional space at reasonable rates. If bids should be asked for at too early a date for insertion in the following issue, send copies of your notice to **THE AMERICAN CITY**, and we will distribute same without charge.

SEWAGE PURIFICATION SYSTEM

Audubon, N. J.
Sealed proposals will be received by Jay Y. Krout, Borough Clerk, Audubon, N. J., at 8 o'clock P. M., April 21st, 1913, for the construction of sanitary sewers and sewage disposal plant for the Borough of Audubon, Camden County, New Jersey, and then opened before Council of the Borough of Audubon for consideration.

Approximately the work consists of the following:
66,000 lineal feet of vitrified sewer pipe, with manholes and flush tanks.
15,000 feet agricultural tile drain, in sewer trench.

Pump and pumping outfit.
Sewage disposal works complete.

Certified check for \$5,000 will be required from each bidder, and Council of the Borough of Audubon reserves the right to reject any or all bids. Plans and specifications can be obtained by addressing the Borough Clerk, Audubon, N. J., provided the request is accompanied by a certified check for thirty dollars (\$30), but of this amount twenty-five dollars (\$25) will be refunded if the copies of plans and specification are delivered to the Borough Clerk within five days after the opening of the bids, provided, however, that the same is in good condition.

Said plans and specifications may be seen at the office of Messrs. Robinson & Wagner, Consulting Engineers, 37 E. Twenty-eighth street, New York City, or at the office of John J. Albertson, Magnolia, N. J., Engineer of the Borough of Audubon.

March 18th, 1913.

Borough of Audubon, Audubon, N. J.
GEORGE L. BROWN, Mayor.
JAY Y. KROUT, Borough Clerk.
H. W. MAYNE, Chairman Sewer Com.
J. J. ALBERTSON, Borough Engineer.

-WATER WORKS PLANT

STATE OF ILLINOIS—BOARD OF ADMINISTRATION
Springfield, March 18, 1913.

Sealed bids will be received by the Illinois State Board of Administration at its office in Springfield, Ill., up to 2 o'clock P. M., Monday, April 21, 1913, and then and there publicly opened, for furnishing and erecting complete, near Anna, Ill., a new Water Works system, including Brick and Reinforced Concrete Pumping Station Electrically Equipped; Filter Plant, exclusive of Filter Equipment; Earthen Dam with Concrete Spillway; a Two-Million Gallon Reinforced Concrete Storage Reservoir; a Power Transmission Line, and a 10-inch and 12-inch pipe line about 3½ miles long.

Plans and specifications may be examined at the office of the Engineer, or copies will be furnished to intending bidders on receipt of a deposit of \$25.00, which deposit will be returned to the party furnishing same upon the return, in good order, of the plans and specifications.

FRANK D. WHIP, Fiscal Supervisor.
DARNEY H. MAURY, Consulting Engr.,
1137-8 Monadnock Bldg., Chicago, Ill.

NOTICE TO BRIDGE CONTRACTORS

Akron, Ohio.
Sealed proposals will be received at the office of the Board of County Commissioners of Summit County, Akron, Ohio, until 12 o'clock noon, April 24th, 1913, for the construction of a reinforced concrete arch bridge 763 feet in length over the Cuyahoga River on North Howard Street Extension.

Bids shall be made on printed forms which can be obtained at the office of the County Commissioners. Plans and specifications are on file at the offices of the County Surveyor and at the offices of Wilbur J. Watson & Co., Consulting Engineers, Cleveland, Ohio.

Plans and specifications can be obtained from the Consulting Engineers on deposit of \$25.00, which will be returned upon the return of the plans in good condition.

Proposals must be accompanied by a certified check for Five Thousand Dollars (\$5,000.00) and addressed to the Board of County Commissioners of Summit County, Ohio, and endorsed "Proposals for Bridge Over Cuyahoga River on North Howard Street Extension."

C. L. BOWER,
Clerk, Board of County Commissioners.
Akron, Ohio, March 21st, 1913.

PAVEMENTS

Dunkirk, N. Y.
The Common Council invites sealed bids for paving six streets in Dunkirk, N. Y. The approximate amount of work is 18,160 square yards. Bids must be accompanied with a certified check for 5 per cent of contract price. Bids will be opened April 15, 1913. Right is reserved to reject bids. Specifications furnished by City Engineer, J. M. Hackett.

R. H. HEPPLE, City Clerk.

PAVING

Bloomfield, Iowa.
Sealed proposals for about 25,000 yards of pavement, open to Brick, Asphaltic Concrete and Portland Cement Concrete, will be received until 8 o'clock P. M., April 15, 1913, then publicly opened. For specifications address

A. B. WELCH, City Clerk.

MOTOR FIRE APPARATUS AND SUPPLIES

Sealed tenders addressed to the City Commissioners of the City of Regina, Sask., and marked "Tenders for Fire Equipment," will be received up to noon of April 21st, 1913, for the supply of the following equipment: One Motor Pumping Engine and Hose Wagon, one Motor Chemical Engine, one Chief's Automobile, Fire Hose, Fire Alarm Boxes, Turret Nozzles and other supplies. Tenderers are required to quote on their own specifications for Motor Apparatus.

The Commissioners reserve the right to reject any or all tenders, or to ac-

cept any bid which may appear to be advantageous to the City.

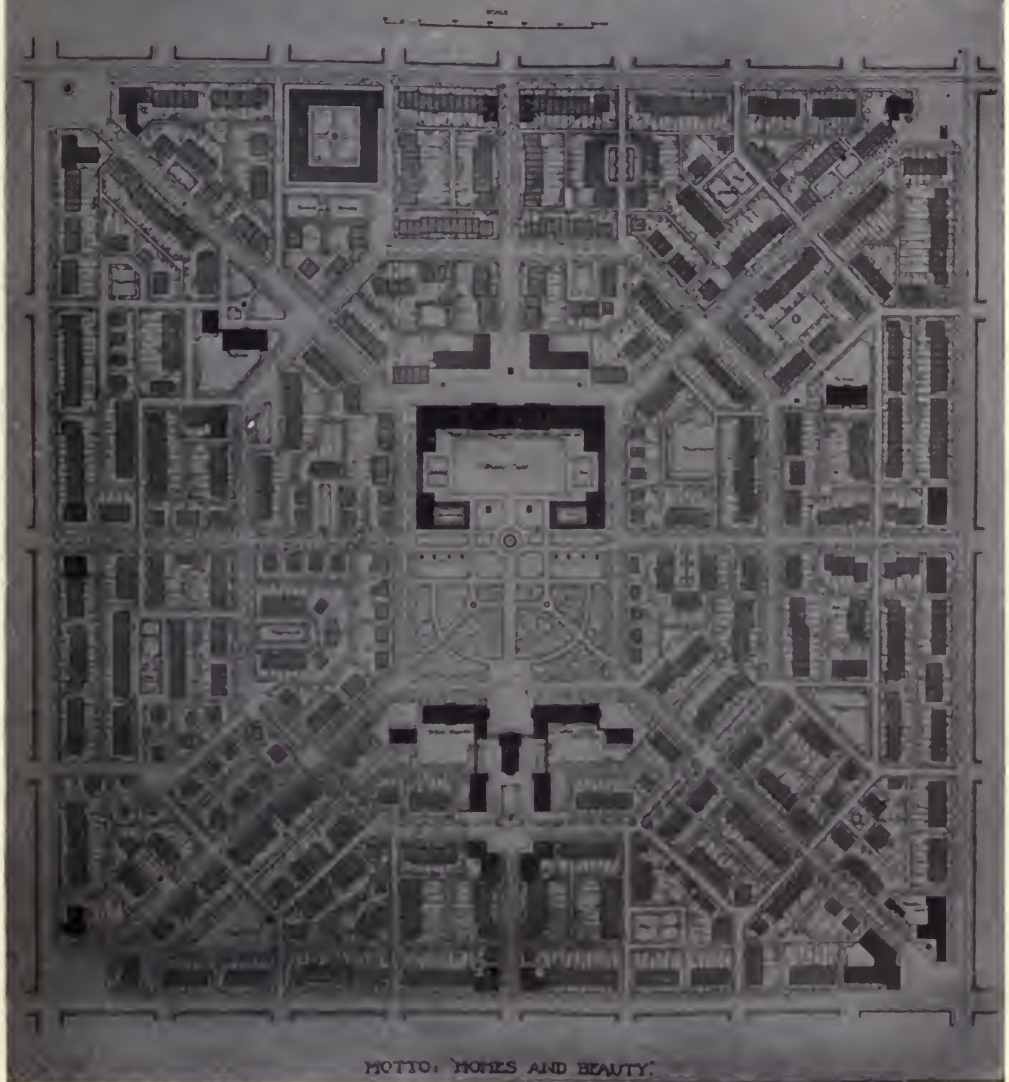
Detailed information may be obtained on application to the Chief of the Fire Department.

Regina, Sask., March 13th, 1913.

*If Your City
or Town Is in
Need of
Apparatus
or Supplies*

in connection
with municipal
improvement
work, and you
are interested
to know the
addresses of
leading manu-
facturers, **THE
AMERICAN CITY**
will be glad
to supply you
with full
information
together with
catalogues or
illustrations
of what is
being used
in other
localities.

SCHEME OF DEVELOPMENT
FOR A
QUARTER-SECTION OF LAND OF THE CITY OF CHICAGO, ILL.



THIRD PRIZE PLAN, BY ALBERT LILIENBERG, HEAD OF CITY PLANNING DEPARTMENT OF GOTHENBERG, SWEDEN, AND MRS. INGRID LILIENBERG

library, 1; municipal building, 1; fire station, 1; concert hall, café, 1; parks, recreation grounds, private parks, workshops, gymnasium, bandstand, tennis courts, etc.,

General Description of the Second Prize Plan

The stated limitation of 1,280 families for the quarter section controls the type of development almost without regard to the price of the land. At this density but few apartments are necessary or desirable, these being located at the corners of the property on the car lines, together with most of the stores. Nor need solid rows of dwellings be built. Detached

houses throughout would be feasible, but there would be wasteful extra expense and a sacrifice of privacy, due to close proximity of windows in adjacent dwellings. The double or semi-detached house is therefore the normal type, with fairly frequent single houses, and also groups of three or four.

The normal lot approximates 35 x 100 feet, but a considerable range is provided to suit varying needs. Important features in several blocks are the allotment gardens, where nearby residents may rent a plot whenever they feel able to carry it along, but they need not

Dolarway Pavement

"It is permanent because it is concrete"

Dolarway is the Permanent Way

The foolish man in the parable built his house upon the sand, just as some modern engineers now build their highways on loose broken stone.

The wise man built his house upon solid rock—and the wise modern engineer establishes his roads everlastingly on monolithic concrete.

The most economical way to build roadways on concrete is the "DOLARWAY."

Dolarway Pavement consists simply of five or six inches of good, rich concrete tamped to a smooth contour and protected from traffic and

the elements by a coat of Dolarway Bitumen and sand.

A Dolarway Pavement costs *much less* than other permanent pavements. The saving in first cost of Dolarway Pavements if placed at interest, would provide a perpetual sinking fund more than sufficient for future maintenance.

Your pavement appropriation goes farthest when you specify Dolarway.

Full particulars and copy of booklet "The Story of Dolarway" free on request.

DOLARWAY PAVING COMPANY
WHITEHALL BUILDING, NEW YORK



Dolarway Pavement, Locke Road, Moravia, N. Y.

be burdened with the permanent responsibility of the extra land. With the low density required of eight families per acre, such means of eking out the family income becomes especially beneficial. Should, however, the demand for these allotments be slight, the land will be almost equally valuable as local playground space.

The principal playground is located with the school. This and most of the other community buildings—such as branch library, fire department, recreation center, a hall, and churches—are grouped about a small park or common.

The street system is designed to provide access by broad avenues, with intermediate streets for local use only, in this way serving the traffic more economically and far more attractively than by the gridiron system. It is not believed, however, that an extremely irregular or circuitous street system should be adopted in this district; nor under present American conditions should there be deep interior courts, impasses and similar features, for these are hard to light and police, and are apt to require extra piping, though economizing in street surface. A considerable variety in site planning is provided, however, with several small parked areas on which houses face. Furthermore, the building lines shown on the plan by broken lines permit interesting compositions, with narrow fore-gardens along all streets. The establishing of an interior as well as exterior building line is an important provision to ensure permanent light and air through the middle of each block.

Most of the street frontage runs north and south to secure sunlight in all rooms, but the valuable frontage along the main thoroughfares is preserved intact. Trees (not shown on the plan, for clearness) are included in a parking strip on all streets. On the short 30-foot streets they are adjacent to the property, with the sidewalks next to the pavement, so as to give adequate space between the rows of trees and to economize on street works, but the building lines are kept the same distance apart as on the 40-foot streets.

The boundary thoroughfares with cars should be widened to 86 feet; and as a part of the street plan a 10-foot strip is taken from the property, making 76 feet for the present. The diagonal avenues are planned for a width of 66 feet; secondary streets, 50 feet; local streets, 40 feet; short, minor streets, 30 feet, and garden walks, 15 feet. These last are to be constructed with open wire fences and will form attractive by-passes into the gardens. With the proper inspiration and guidance, the back yards should develop fully as attractively as the street frontages.

The type of improvement proposed by this plan will provide the essential physical features of a garden suburb adapted to American conditions and ideals. If wise methods of financing and disposal are adopted, and effective community interests are fostered, its permanent success will be insured.

MISCELLANEOUS DATA

| NUMBER AND SIZES OF LOTS. | | TOTAL NUMBER, 1,156 | |
|---------------------------|-----|---------------------|-----|
| Area in Sq. Ft. | No. | Frontage, Feet. | No. |
| Under 3,000..... | 49 | 25 | 10 |
| 3,000-3,400..... | 221 | 30 | 250 |
| 3,500-3,900..... | 454 | 35 | 550 |
| 4,000-4,400..... | 200 | 40 | 237 |
| 4,500-4,900..... | 72 | 45 | 50 |
| 5,000-5,400..... | 57 | 50 | 36 |
| 5,500-9,000..... | 43 | Irr. | 23 |

Number of families accommodated, 1,275, including 1,156 in dwellings and 119 in apartments.

Number of feet of public sewers, 22,500.

Number of square yards of street pavement, 67,433.

Number of square yards of sidewalks, 25,578.

Percentage of total site in streets, 22%.

Percentage of total site in other public spaces, 9%.

Total area in streets, square feet..... 1,462,300

Total area in parks and gardens, including sites for school, library and future building..... 595,800

Total area in lots for dwellings..... 4,433,200

Area in lots for other buildings—apartments, shops, churches, fire department and club..... 134,200

Total area in quarter section, excluding boundary streets, 66 feet wide..... 6,625,500

General Description of the Third Prize Plan

This quarter-section of land the competitor has tried by the simplest of means to make a site for real homes. The streets have not been made too long, and at the end of them one's eyes will always meet a pleasant view. Streets without any green and streets with grass, trees and fore-gardens alternate with one another; here and there are open spaces left for small parks and playgrounds. To the schools have been given sunny and free locations, and other public buildings have been placed on the most monumental sites of the section. The directions and dimensions given to the streets have not been fixed with regard to the thoroughfare traffic, but to local traffic and to the street car lines.

As well for economical reasons as with regard to esthetics, the by-streets have been made as narrow as possible, while allowing proper distances between the houses through fore-gardens.

MISCELLANEOUS DATA

Street frontage of lots for dwellings, 33,000 feet.

Area of lots for dwellings, 3,761,000 square feet.

Number of families to be accommodated, 1,275.

Public sewers, 29,900 feet.

Street pavements, 110,000 square feet.

Sidewalks, 109,000 square feet.

Percentage of total site in streets, 80.4%.

Percentage of total site in other public spaces: parks and playgrounds, 7.4%; public buildings, etc., 8.4%.



TIFFIN

MUNICIPAL VEHICLES



Modern Methods of Street Cleaning

The Sweeping of Streets by Hand or Machine Sweepers is a thing of the past. The Automatic Flushing Machine has solved this problem perfectly, and filth and dust can now be done away with in a sanitary manner and the streets can be kept absolutely clean at a minimum expense.

The devices are simple, the mechanism not complicated and any intelligent man can handle them perfectly with fifteen minutes' instruction. The material is of the finest and the workmanship the best possible, and they are builded to stand constant use without repair.

THE TIFFIN WAGON CO., Tiffin, Ohio

THE FOREIGN DEPARTMENT

A Record of Municipal Progress Abroad

Conducted by Edward Ewing Pratt, Ph. D.

Garbage Disposal in Liverpool

The collection of garbage in the city of Liverpool is a municipal activity, the cost of which is a charge against the taxes. The city engineer has jurisdiction over this activity and is assisted by the chief superintendent and three divisional inspectors. The latter are in direct touch with the inspectors of the 22 divisions into which the city is divided.

Almost every house in Liverpool has an ashpit in the rear yard. These pits are emptied once a month during the winter and more frequently during the summer. The contents of the pits are conveyed in baskets and wheelbarrows and emptied direct into covered dust wagons and are then taken to the destructors by horse and motor vehicles. Most of this work is done at night.

In a few places where no provision has been made for the storage of garbage, it is collected daily by a small cart. Hospitals, markets and other institutions having large amounts of refuse are provided with special carts and these are removed daily and empty ones left in their places. The streets are cleaned daily by means of hand and machine brushes. All the main roads are washed regularly throughout the year, 1½-inch hose being used. Streets, courts and passages which become in the least insanitary are flushed frequently during the summer months. When the main roads become dusty they are watered four or five times daily. Those paved with macadam are treated with a dust-laying preparation made of tarco and calcium chloride.

Heavy snows are infrequent in Liverpool, but, owing to the heavy crosstown traffic between the various docks, even a light fall must be disposed of quickly, and for this purpose a great deal of salt is used.

The city derives some income from the sale of those portions of the garbage which can be utilized. Street sweepings, mixed in various quantities, are sold to farmers as manures. Fish offal is collected and dis-

posed of to manufacturers of dry manure. Tin scrap, oyster shells, pig hair, etc., are all disposed of to manufacturers. Waste paper is collected free of cost and sold to contractors for repulping.

Garbage and refuse from manufacturing establishments are received at the various destroyers between the hours of 5 A. M. and 9:30 A. M. and between 4:30 P. M. and 5:30 P. M. any week day except Saturday. The charge for this service varies from 12 cents for a load not exceeding 7 hundredweight to 72 cents for a load not exceeding 42 hundredweight and 12 cents for every hundredweight in excess of this weight. Manufacturers' refuse can also be collected at an average charge of about \$1.21 per cart load.

The daily wages and hours of labor of men employed in street cleaning and garbage collecting are as follows: Ashmen, \$1.01; working gangsters, \$1.09; street sweepers, 97 cents; carters (single horses), \$1.09; carters (teams), \$1.21. The hours of work are from 5:30 A. M. to 4 P. M. except on Saturdays, when they are from 5:30 A. M. to 1 P. M. The city provides the uniforms. The holidays of the workmen are six working days with pay and for gangsters and foremen 10 days with pay. Liverpool has a reputation of being a comparatively clean city, which, as it is one of the largest seaports in the world, is very much to its credit.

+ +

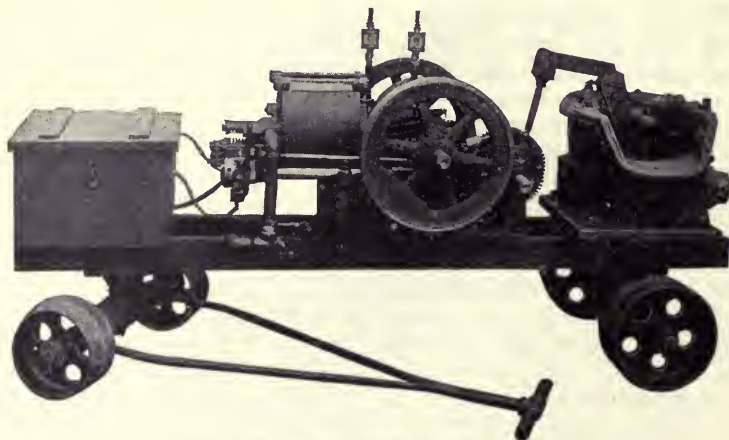
The English National Health Week

The success which attended the efforts of the English National Health Week Committee last year has encouraged the organizers to undertake the work again this year. "National Health Week" will be celebrated during the week beginning April 6, when hundreds of the movement's supporters will work to bring home to the masses the vital importance of both public and personal hygiene. The central committee has been formed chiefly for the purpose of guiding the representative local

The Atlantic Diaphragm Pumping Engine

is used by progressive municipal engineers and contractors for pumping out sewers, trenches, excavations, pier foundations, etc.

It has for years proved its superiority as a worker and as a time and money saver.

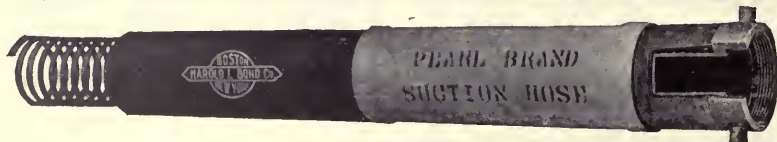


List Price, \$150.00. Code Word "Atlapump."

Innumerable testimonials prove conclusively that the Atlantic is overwhelmingly the best gasoline-driven pumping outfit on the market.

Municipalities testify to the great value of this outfit.

Pearl Brand Suction Hose and Couplings



Unlike ordinary hose. Made on a steel spring wire, heavy enough to withstand a crushing test of at least 50% more than common hose. Canvas wrapped; has extra heavy couplings, securely attached to the hose—1½ to 3 pounds heavier than on other hose. The most satisfactory hose made. Supplied with Atlantic Engines or sold separately. Let us know your need and we will gladly do all in our power to assist you. Illustrated catalogs answer most questions, but a letter from us will cover even most technical details.

LET US HEAR FROM YOU TODAY!

Harold L. Bond Company

383 M Atlantic Ave.
BOSTON

Manufacturers of Ross Concrete Spade,
Andrews' Concrete Tamper, Safety
Trench Braces, Felton's Sewer and Con-
duit Rods, etc.

39 W Cortlandt St.
NEW YORK

committees, their idea being that each locality shall be free to adapt the scheme to its own special conditions and needs. The general plan of the campaign consists of the assigning of special lessons in the schools, the preaching of appropriate sermons in churches of all denominations, and the holding of many public meetings at which addresses are given by recognized experts on all phases of the subject. Public health authorities recognize the fact that one of the greatest obstacles to success is the appalling ignorance of the vast masses of the population upon even the most elementary matters of health and hygiene; they are, therefore, lending their heartiest support to the movement.

✦ ✦

Garden Cities Association for Spain

After a good deal of agitation a Spanish Garden Cities Association has been constituted with headquarters at Barcelona. It is called Sociedad Civica La Ciudad Jardin. The Association has an aim similar to those of other countries, save that it has wisely provided for a broad sphere of action in order that important activities may be included in its program, which are covered by separate associations in other countries. The new society will work under the auspices of the Museo Social, a famous society similar to the Musée Sociale of Paris, but it will be supported by the local authorities of Barcelona. Mr. C. Montoliu, its general secretary, made a study tour of England last fall. Already he has been able to report that several important schemes are now in the hands of the society for approval.

✦ ✦

An International Urban Exhibition

Great preparations are being made for the International Urban Exhibition to be held at Lyons, France, in November, 1914.

The exhibition is being organized by Senator Edouard Herritt, an energetic specialist and former Mayor of Lyons, and it will be comprised of no less than 226 sections. These sections will deal with everything connected with modern city life and town planning, including the construction and upkeep of roads, means of transportation, water supply, drainage, the furnishing, heating, lighting and ventilation of dwellings, food supplies and adulteration, hygiene in all its branches, care of children at school, domestic education, etc.

Foreign manufacturers and inventors

are especially invited to exhibit, and it is expected that the exhibition will be an historic landmark in the evolution of the modern city. The Foreign Office has already instructed ambassadors and councils all over the world to collect useful material and information. ✦ ✦

Results of Rehousing in Liverpool

The result of rehousing in Liverpool is an encouraging proof that a great city faced with a serious slum problem and all its attendant evils can accomplish much by means of a vigorous policy. Liverpool's figures up to December 31, 1912, are eloquent:

| | |
|--|-------|
| Total number of sanitary dwellings erected | 2,663 |
| Erected prior to 1897 | 629 |
| Erected since 1901 | 2,034 |

(These dwellings are for the laboring classes and are reserved for the dis-housed.)

Some Results.

| |
|--|
| Death rate—Declined from 50 to 27 per 1,000. |
| Tuberculosis—Declined from 4 to 1.9 per 1,000. |
| Typhus fever—Once never absent; in 1910 not a case. |
| Typhoid—In 1896, 1,300 cases; in 1911, 200 cases. |
| Police prosecutions—Have fallen 50 per cent. |
| Cash saving to city—At least \$325,000 per year, or double the cost of the rehousing work. |

✦ ✦

Housing Progress in Ireland

Rehousing in Ireland is making giant strides. A recent competition for working-class dwellings in Belfast was won by the firm of Messrs. Chillingworth and Levi, of Cork and Dublin, and their plans will be carried out immediately. The scheme provides for 262 tenements of two types. One is the "Maisonette" or separate cottage, and the other is one house containing two flats on two separate floors. The estimated cost of building the former is \$440, and the latter \$450.

There is a tentative scheme on foot in Pembroke, County Dublin, which contemplates the provision of between 400 and 500 new houses. Notwithstanding the absence of the "very poor" in this locality, the people have to dwell under the most appalling conditions and the usual rent for a single room in the slum area is about 72 cents.



The hilly City of Poughkeepsie bought a 1909 Model—liked it and bought a 1912 Model.—“Evidence.”

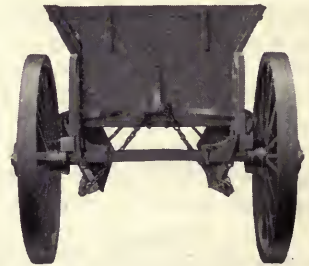
There's “others”

Do you want to know more about this machine? Send for circular.

“FRIEND” MFG. COMPANY

Gasport, New York

FIFTY BIG CITIES



are using Watson ash, garbage and refuse wagons. They range from New York to Seattle and from New Orleans to Winnipeg. Then there are scores of smaller places saving money in the same way. We want to send you the list. The Watson catalog explains why all these cities pay more for the Watson. May we send it?

WATSON WAGON COMPANY, Canastota, N.Y.

The World's Largest Builder of Dumping Wagons

BRANCH OFFICES:

256 Broadway, New York, N. Y.
604 Witherspoon Building, Philadelphia Pa.

1102 Farmers Bank Building, Pittsburgh, Pa.
1391 Main St., Buffalo, N. Y.

Conventions and Exhibitions

Program of the Fifth National Conference on City Planning

A preliminary announcement, issued by Secretary Flavel Shurtleff, gives promise that the National City Planning Conference to be held in Chicago, May 5-7, will be an exceedingly interesting and practical gathering. Among the topics and speakers will be:

A City Planning Programme—Frederick Law Olmsted, Fellow American Society of Landscape Architects, Brookline, Mass.

The Progress of the Year in City Planning—A somewhat statistical report to be prepared by the Secretary.

A City Planning Survey—Virgil G. Bogue, of Vancouver, B. C., author of the "Seattle City Plan."

A Survey of the Legal Status of a Specific City in Relation to City Planning—Edward M. Bassett, Esq., of New York City.

Gaining Public Support for a City Planning Movement—Charles H. Wacker, Chairman, Chicago City Plan Commission.

Organization and Functions of a City Planning Commission—Hon. William A. Magee, Mayor of Pittsburg, Pa.

Planning Improved Means for the Circulation of Passengers and Freight—Milo R. Maltbie, of the Public Service Commission, New York City.

The Actual Distribution of the Cost of Kansas City Parks and Boulevards—George E. Kessler, Fellow American Society of Landscape Architects, St. Louis, Mo.

German Methods of Paying for Improvements Out of Excess Land Purchases—Dr. Werner Hegemann, Berlin.

Some Aspects of the Chicago City Plan—E. H. Bennett, joint author of the "Burnham City Plan" for Chicago.

The conference will open at 12.30 on May 5 with a luncheon, to be followed by a city planning automobile tour of Chicago. The luncheon will be served at the Hotel La Salle, which will also be the headquarters of the conference. The Committee appointed at the Boston Conference to conduct a "Study in City Planning," will report during the conference sessions, and several studies will be exhibited and discussed. The conference will close with a subscription dinner at which the members residing outside of Chicago will be invited guests.

A Proposed National Convention on Fire Waste

At a meeting held March 7 under the auspices of the Philadelphia Chapter of the American Institute of Architects, preliminary plans were made for a National Conference on Fire Waste, to be held in Philadelphia in October next. The meeting was the culmination of a tour through several states made by Franklin H. Wentworth, of Boston, Secretary of the National Fire Protective Association, in co-operation with the Institute.

The plans for the proposed conference, as outlined by Powell Evans, Chairman of the Philadelphia Fire Prevention Commission, are in part as follows:

"This commission, with the sanction of the present Philadelphia Administration, is preparing an invitation for an American Fire Waste Congress to be held in this city somewhere about the middle of October next, to consider the control of American fire waste in all its relations. Proper officials of the National Government concerned in national economic problems; state and municipal officers touching the subject of fire prevention and insurance (including representatives of the fire prevention and protection forces); representatives generally of all great trade, civic, labor and business associations, and representatives of insurance organizations will be invited to attend. The whole subject of arson will be considered, as well as the matter of annual occupancy licenses of buildings. The proposal of the consolidation of all inspection agencies in cities into a central inspection bureau will be investigated, as well as the best methods of public education on the whole matter. The program would necessarily be so broad and complex that papers and discussion following them would necessarily be limited to subjects and hours defined by the controlling resolutions which would open the congress."

The preliminary outline for a program, as submitted by Mr. Evans, includes papers on location and exposure hazard, building construction, building codes, mechanical aids to fire protection, design and equipment of fire houses, upkeep of public fire apparatus, state and municipal legislation, public education with respect to fire waste and other problems relating to fire protection and insurance.



CLEAN Your STREETS for the Least MONEY

Let the saving in operating cost pay for the equipment.

This is accomplished by the use of

The Etnyre Uniform Pressure Street Flushers

Which will show from 30 to 50% greater efficiency than any other type.

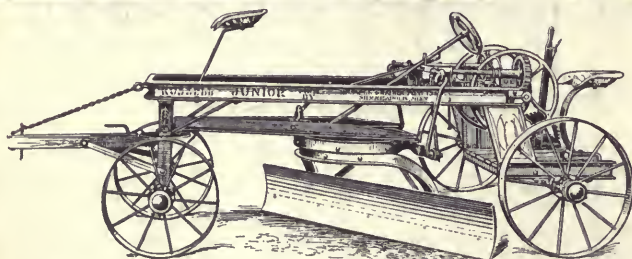
Time and money saved both in filling and emptying tank. Generous strength in every part, with simplicity of construction and ease of operation, combine to make the ETNYRE the best Flusher on the market.

LET US TELL YOU ALL ABOUT IT.

We make also a complete line of Motor Truck Sprinklers and Flushers, as well as Horse-drawn Street Sprinklers and Road Oilers. Write us for catalogue and further details.

E. D. ETNYRE & COMPANY, Oregon, Illinois, U. S. A.

Russell Road Machines Most Efficient Line On Earth



Russell Junior Reversible Road Machine

A four-horse machine that is complete in every detail, and has every adjustment of our "Standard" or eight-horse machine. It has strength, durability and widest range. Reversing platform; one-piece axle both rear and front; patented rear axle shift. Blade 6-foot. Steel wheels with removable boxes, sand-proof hubs and hard oil cups. Weight 1500 lbs.

This type machine also made in two larger sizes. "Standard" for eight horses, weight 3000 lbs., and "Traction Special," for engine power, weight 3500 lbs.

What the "Russell Line" Affords

We make a full line of earth handling and road building machinery, as well as Corrugated Metal Culverts, Culvert Moulds, Steel Bridges, etc. The machine line consists of elevating graders, road machines of all sizes, buck scrapers, wheel and drag scrapers, road and railroad plows, road drags, grader disc plows and snow plows for sidewalks.

Write for the Big Russell Catalog and free trial offer.

Our 72-Page book will be a revelation to any one interested in good road building and maintenance. It contains valuable pointers on road building, ditch construction, grade or embankment work, wagon loading, installation of bridges, with concrete floors, concrete culverts and a very interesting cost table. It is sent free to anyone concerned in earth-moving matter. In writing, please state the kind of work you are especially interested in.

RUSSELL GRADER MFG. CO., 2238 UNIVERSITY AVE. S.E., MINNEAPOLIS, MINN.

Municipal Government Association of New York State

A conference and dinner to advance the cause of home rule for the cities of New York State was held in Albany on March 13, under the auspices of the Municipal Government Association and the New York State Conference of Mayors and Other City Officials. Governor William Sulzer was the guest of honor, the other speakers including: John K. Sague, President of the Municipal Government Association and Former Mayor of Poughkeepsie, President of State Conference of Mayors; James W. Wadsworth, Jr., former Speaker of the Assembly; Alfred E. Smith, Speaker of the Assembly, and Frederick M. Davenport, former State Senator.

The legislative program of the Municipal Government Association includes:

1. A sound Home Rule constitutional amendment.
2. A general Municipal Empowering Act,* making petty local enabling acts unnecessary.
3. An Optional City Charters law, giving to second- or third-class cities the right to adopt one of six ready-made plans of government by referendum without legislative action.
4. An Optional Non-Partisan Municipal Elections Act, giving any city the right to adopt non-partisan primaries and elections without legislative action.

The annual election of officers and directors of the Municipal Government Association resulted in the choice of the following:

President—Hon. John K. Sague, Poughkeepsie.

Treasurer—Samuel A. Lewisohn, New York.
Secretary—Virgil H. Clymer, Syracuse.

Executive Secretary—Walter T. Arndt, New York.

Vice-Presidents—Prof. Charles A. Beard, New York; Hon. Samuel A. Carlson, Jamestown; Dr. Woodford J. Copeland, Elmira; William H. Crosby, Buffalo; Dr. John H. Finley, New York; Charles Gibson, Albany; Dr. Elgin R. L. Gould, New York; Dr. Jeremiah W. Jenks, Ithaca; Dr. F. Park Lewis, Buffalo; Dr. Albert Shaw, New York; Hon. George S. Burd, Buffalo; John J. Hopper, New York; A. L. Rohrer, Schenectady; Isaac N. Seligman, New York; Dr. Charles P. Steinmetz, Schenectady; Giles H. Stilwell, Syracuse; F. S. Tomlin, Brooklyn.

Directors—Walter T. Arndt, New York; Robert S. Binkerd, New York; Richard S. Childs, New York; Virgil H. Clymer, Syracuse; J. Hampden Dougherty, New York; Prof. Herman L. Fairchild, Rochester; Dar-

win R. James, Jr., Brooklyn; George W. Knox, Niagara Falls; Samuel A. Lewisohn, New York; Howard T. Mosher, Rochester; Chas. Rohlfs, Buffalo; John K. Sague, Poughkeepsie.

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SOME COMING EVENTS

APRIL 15-16.—CHARLOTTE, N. C.

Tri-State Water and Light Association of the Carolinas and Georgia. Secretary, J. W. Neave, Salisbury, N. C.

APRIL 24-25.—BIRMINGHAM, ALA.

National Good Roads Federation.

APRIL 25-29.—ATLANTA, GA.

Southern Sociological Congress. General Secretary, J. E. McCulloch, Nashville, Tenn.

MAY 5-7.—CHICAGO, ILL.

National Conference on City Planning. Secretary, Flavel Shurtleff, 19 Congress Street, Boston, Mass.

MAY 6-10.—RICHMOND, VA.

Playground and Recreation Association of America. Annual Meeting. Secretary, H. S. Braucher, 1 Madison Avenue, New York City.

MAY 12-14.—FORT WORTH, TEX.

Southwestern Water Works Association. Secretary, E. L. Fulkerson, Waco, Tex.

MAY 13.—BALTIMORE, MD.

American Association for Promoting Hygiene and Public Baths. Permanent Secretary, William H. Hale, Ph. D., Municipal Building, Brooklyn, N. Y.

MAY 15-20.—BOSTON, MASS.

National Congress of Mothers. Secretary, Mrs. A. A. Birney, 806 Loan & Trust Building, Washington, D. C.

JUNE 23-28.—LONDON, ENGLAND.

International Roads Congress. Secretary, W. Rees Jeffreys, Queen Anne's Chambers, Broadway, Westminster, London, S. W., England.

JUNE 5-7.—CHARLESTON, S. C.

Southern Commercial Secretaries' Association. Secretary, A. W. McKeand, Raleigh, N. C.

JUNE 5-7.—BINGHAMTON, N. Y.

Conference of Mayors and Other City Officials of the State of New York. Secretary, William P. Capes, 105 East Twenty-second Street, New York City.

JUNE 23-27.—MINNEAPOLIS, MINN.

American Water Works Association. Annual Convention. Secretary, J. M. Devin, 47 State Street, Troy, N. Y.

JUNE 24-26.—SPRINGFIELD, ILL.

American Association of Officials of Charities and Correction. Secretary, W. T. Cross, Columbia, Mo.

* Subsequently approved by the legislature. See page 443 of this issue. The other bills are still pending as this issue goes to press.

A REAL ROLLER

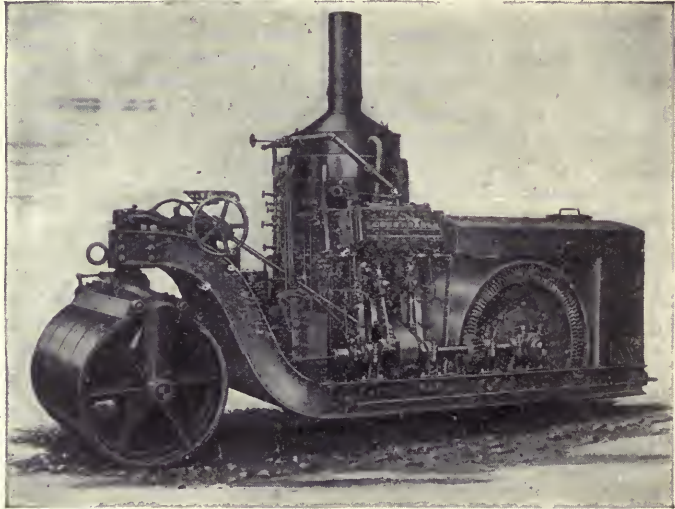
For towns and cities that want serviceable machines

The Monarch Tandem Roller

is better built, develops more power, is more easily operated and controlled, and will last longer than any other roller of this type.

This roller can be used in rolling park and cemetery drives, repairing brick and macadam streets, and in laying asphalt.

No town or city should be without a tandem roller. THE MONARCH is the roller.



The Monarch Tandem Roller.

HANDSOME CATALOGUE ON REQUEST

The Good Roads Machinery Co., Inc., Kennett Sq., Pa.



Road Oiling

AND

Street Sprinkling

¶ Let us figure with you before you make your contracts this year. There's a saving of money in it for your community.

¶ We have the experience, the apparatus and the determination to handle this work for you in a way which will enable us to hold your business year after year. Why not drop us a line to-day and let us know what you have in mind? Our suggestions will cost you nothing and may open your eyes to some possibilities you had not thought of.

American Car Sprinkler Co.
WORCESTER, MASS.
Specialists on Road Oiling and Street Sprinkling





Monthly and Yearly Fire Losses

The losses by fire in the United States and Canada during the month of February, as compiled from the records of the *New York Journal of Commerce*, reached a total of \$22,084,600. Not less than 331 of the fires during the month caused in each instance a loss of \$10,000 or more. While there was none in the nature of a conflagration, the one in Savannah, Ga., destroyed wharf and railroad property to the amount of \$1,100,000.

| MONTHLY LOSSES | | | | YEARLY LOSSES | |
|--|--------------|--------------|--------------|---------------|---------------|
| | 1911 | 1912 | 1913 | 1912..... | \$225,320,900 |
| January | \$21,922,450 | \$35,653,150 | \$20,193,250 | 1911..... | 234,337,250 |
| February ... | 16,415,000 | 28,601,650 | 22,084,600 | 1910..... | 234,470,600 |
| March | 31,569,800 | 16,650,850 | ..... | 1909..... | 203,649,200 |
| April | 17,670,550 | 16,349,400 | ..... | 1908..... | 238,562,250 |
| May | 21,422,000 | 21,013,950 | ..... | 1907..... | 215,671,250 |
| June | 20,691,950 | 16,103,450 | ..... | 1906..... | 459,710,000 |
| July | 25,301,150 | 15,219,100 | ..... | 1905..... | 175,193,800 |
| August | 12,662,650 | 14,158,800 | ..... | 1904..... | 252,554,050 |
| September .. | 11,333,250 | 13,779,300 | ..... | 1903..... | 156,195,700 |
| October | 13,945,000 | 13,651,650 | ..... | 1902..... | 149,260,850 |
| November .. | 18,680,600 | 16,172,300 | ..... | 1901..... | 164,347,450 |
| December ... | 22,722,850 | 17,967,000 | ..... | 1900..... | 163,362,250 |
| T'l for y'r. \$234,337,250 \$225,320,900 | | | | 1899..... | 136,773,200 |
| | | | | 1898..... | 119,650,500 |

Indignation, Agitation, Education, Legislation, Conservation*

A Slogan of Sequence in Fire Prevention

By Willard Done

Insurance Commissioner of Utah

I AM not much of a juggler of words, but it seems to me that a slogan of sequence can be adopted in our fight against the fire waste. This may consist of five words equal in length and similar in sound. The first four could represent the premises, the last one the result, or conclusion.

* From an address delivered at the recent Minnesota Conservation Congress.

The slogan would be: *Indignation, Agitation, Education, Legislation, Conservation.*

Each of the first four words represents a stage in our progress, and the last the goal for which we are striving. We have just reached the first stage, and that within recent years. There has been a growing feeling of indignation on the part of the American people, and its growth is a splen-

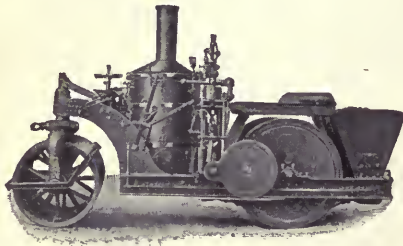


The Ohio Kerosene Roller

A ten-ton, two-cylinder, 30 H. P. Kerosene Road Roller, 6 ft. 6 in. in width. A roller that is heartily endorsed by every user.

WRITE FOR CATALOG

THE OHIO TRACTOR MFG. CO.
MARION, OHIO



Buffalo Pitts Double Drive Tandem Roller

Buffalo Pitts Road Rollers

Our patent double drive tandem rollers are especially designed for parks, cemeteries and for rolling all kinds of block and plastic pavements.

Built in all sizes, $2\frac{1}{2}$ to 10 tons. Write for catalogue.

Buffalo Steam Roller Company
Boston BUFFALO New York

"The General Utility Implement"

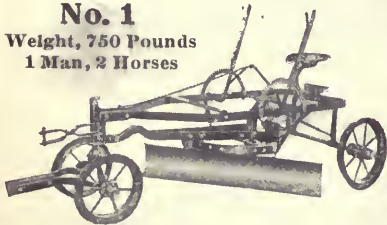
THE GLIDE

GRADER — LEVELER — DITCHER

The Best All-Round Road Machine

No. 1

Weight, 750 Pounds
1 Man, 2 Horses



MADE IN TWO SIZES

Two strongly built, powerful, light weight machines that fulfill every requirement for leveling, grading and ditching. Will

dig a V-shaped ditch from 14 inches to 30 inches deep. Flanged wheels. Will not skid. Pivot axle. Frame 30 inches from the ground. Direct lever connection with blade permitting instant operation.

No. 3

Weight, 1300 Pounds
1 or 2 Men, 2 or 4 Horses



The Machine of Real Results.

FREE Write us to-day for catalogue and special good-roads matter **FREE**

GLIDE ROAD MACHINE CO., 509 Huron St., Minneapolis, Minnesota



ONE OF FIVE WHITE TRUCKS USED BY THE FIRE INSURANCE BOARD OF CHICAGO, ILL.



LOCOMOBILE COMBINATION HOSE AND CHEMICAL WAGON, BRIDGEPORT, CONN.

Niagara Triplex High Pressure Park Sprayer

These machines are used by the Park Departments of Buffalo, New York, Jersey City, Boston, St. Louis, Pittsburgh, Ft. Wayne, Ind., and many others.



Triplex Outfit with Tower Folded

Some Advantages—Porcelain-lined cylinders that are not affected by corrosive spray materials. Guaranteed for ten years. Three cylinders, therefore a constant working pressure of from 250 to 300 pounds, which is necessary to do effective spraying. Three and one-half horsepower slow speed, Hooper water-cooled, non-vibrating engine. Weight only 325 pounds. Wagon frame made of steel. Tank made of Highland cypress, tongue and grooved and trimmed entirely with steel. Tower made of steel tubing, three legs and can be folded instantly.

Write for prices and catalog.

**NIAGARA SPRAYER CO.
MIDDLEPORT, N. Y.**

We also manufacture all kinds of spraying materials.



Why have Weeds in Roadways and Gutters

When one application of "**HERBICIDE**"

THE ORIGINAL AND OLD RELIABLE WEED EXTERMINATOR

kills both tops and roots, and does away with them permanently?

There is nothing which makes a city, park or cemetery look so neglected as roads and gutters which are overrun with grass and weeds. And this is bound to be the case unless men are kept going all the time pulling them; but this means considerable and unnecessary expense.

One barrel of "Herbicide" makes 2,000 gallons of treating liquid by simply mixing with water. An application takes only 24 hours to show results. *Results guaranteed.*

Used by thousands of cities and parks with great success during the last twenty-five years. The picture shown above is one example.

Write for literature and quotation on any quantity.

THE READE MFG. CO.

1020 Grand St., Hoboken, N. J.

did sign and gives great promise. The only difficulty is that popular indignation is sometimes evanescent, passing away like the eruption of a geyser and producing just about as much effect.

The indignation on this subject, however, bids fair to be well-directed and efficient. It is directed by men and organizations which are strong and determined in the fight. They are transforming this popular indignation into agitation for improvement, for correction of evils, for accomplishment of definite and positive results. This will ultimately lead to the third stage, popular education along lines of fire prevention. A mere commencement has been made here, scarcely enough to be regarded as any more than a promise of what may and must be done. But the promise is encouraging, and I think it will enable us to direct our efforts and secure splendid results.

An outgrowth of the education and agitation will be legislation; the enactment of laws requiring better building construction, greater care of inflammable material, greater control over conflagration hazards. The enactment of such laws and their subsequent enforcement, which must be a consequence of this educational work, ought to bring as its ultimate result the object we are striving for. If three-fourths of our fires are preventable, that proportion must be prevented. If our fire loss is eight times that of Europe, it must be reduced to Europe's excellent ratio. The slogan will not have served its purpose until all that we hope to accomplish in conservation has been accomplished.

The woefully large fire waste of the United States as compared with that of other countries is due, in my opinion, chiefly to these five causes:

First—Poorer construction;

Second—Greater carelessness;

Third—Less strict individual responsibility;

Fourth—Lack of popular education in fire prevention;

Fifth—Too much relative attention to fire fighting as compared with fire prevention.

Action should be taken by all cities and towns to require the use of better building materials and demand better construction for fire resistance, especially in closely built districts. For this purpose a sugges-

tive building code has been adopted by experts.

There should be uniform enactment in the various states of laws prohibiting the manufacture and sale of the explosive match, which lights on everything, and especially when you don't want it to.

The public authorities of states and municipalities should coöperate for a safe and sane celebration of Independence Day and Christmas, as this is a fruitful field for corrective work.

Proper regulation should be had of the transportation and storage of inflammable oils and explosives. This is imperatively necessary, since nearly every cross-roads store has become a depot where automobile drivers may have their supply of gasoline replenished. In this connection, I am reminded of the domestic hazard in gasoline, now that it has become so great a factor in the cleaning of clothes. The deadly danger of gasoline fumes is not yet known to many of our housewives.

It should be demanded that efficient automatic fire extinguishing apparatus be installed in all commercial establishments, places of public assembly, and congested districts of cities. All buildings where public assemblies gather should be so arranged as to exits, etc., that the danger of loss of life in the case of unavoidable fires may be reduced to a minimum. Construction for fire resistance is the first desideratum here; the second is the proper means of fire fighting and public egress.

The adoption of effective electrical ordinances in the various cities should be insisted upon. Here, too, the experts have done the work of drawing the ordinances for us.

Every state should have a fire marshal law and officials to enforce it. The law should be strict, carefully drawn, and just as earnestly enforced. In connection with this there should be state fire prevention associations composed of influential business men and officered by leaders in public movements. The duty of this organization should be to create a strong sentiment for solid buildings, clean premises, fire prevention laws, and ordinances governing flues, electric wiring, etc., giving added ordinances looking to the lessening of our criminal fire waste.

Each city should have a well-paid, fully equipped fire department, and a good water



This illustration shows a part of installation of G-E Ornamental Luminous Arc Lamps in Lynn, Mass.

One of the first considerations in municipal improvement is a good lighting system.

Merchants know that well-lighted, attractive-looking streets bring trade; and every citizen becomes a "committee of one" in praise of his brighter, busier city.—The

Ornamental Luminous Arc Lamp

is designed for progressive cities.

The "WHITE WAY" type for the business thoroughfares.

The "RESIDENTIAL" type for streets in the residence district.

The "PARKWAY" type for boulevards, squares, parks, etc.

The beautiful, soft, yet brilliant light from these lamps, together with the artistic poles, add a charm and attractiveness to any city.

**Make your city busier, brighter and more attractive—
*An Ornamental Arc Lamp City.***



Type of pole
used in
Lynn, Mass.

General Electric Company

LARGEST ARC LAMP MANUFACTURER IN THE WORLD

General Office :
Schenectady, N. Y.



Sales Offices
in All Large Cities 4122

system, immediately available for fire fighting.

Add to these the following steps which will doubtless be a matter of accomplishment in the near future, and it will be realized how splendid is the opportunity for curative and preventive and constructive work: the demand for high qualifications for fire insurance agents and brokers; the

coöperation of local fire prevention bureaus with state and national conservation bodies; the organization of an American Fire Prevention Association with larger powers than are possessed by any body extant; and, finally, a demand for compliance with the seemingly small rules of care and economy which distinguish European civilization as compared with our own.

Items of Civic and Municipal Progress

Victory for Municipal Home Rule in New York State

The intelligent campaign for home rule for the cities of New York State, conducted by the Municipal Government Association, the Annual Conference of Mayors, Citizens' Union and other public-spirited organizations and individuals, has at last borne fruit. During the last week of March both Senate and Assembly concurred in the enactment of the Cullen-Levy home-rule bill, to the approval of which Governor Sulzer is already pledged.

The "general grant of powers" in the new act reads as follows:

"Every city is granted power to regulate, manage and control its property and local affairs, and is granted all the rights, privileges and jurisdiction necessary and proper for carrying such power into execution. No enumeration of powers in this or any other law shall operate to restrict the meaning of this general grant of power, or to exclude other powers comprehended within this general grant."

A long list of specific powers are granted in the act, twenty paragraphs being devoted to this section. Among the broadest of these is paragraph 13, in which every city is empowered

"To maintain order, enforce the laws, protect property and preserve and care for the safety, health, comfort and general welfare of the inhabitants of the city and visitors thereto; and for any of said purposes to regulate and license occupations and businesses."

The term "general welfare" is defined to include, among other things, the promotion of education, art, beauty, charity, amusement, recreation, health, safety, comfort and convenience.

The act contains important restrictions as to the sale or lease of city real estate and franchises. No franchise shall be granted or operated for a period longer than fifty years. Provision for a referendum vote is made as follows:

"In any city the question whether any proposed sale or lease of city real estate or of any franchise belonging to or under the control of the city shall be approved shall, upon a demand being filed, as hereinafter provided, be submitted to the voters of such city at a general or special election, after public notice to be published at least once each week for three weeks in the official paper or papers. Such demand shall be subscribed and acknowledged by voters of the city equal in number to at least 10 per centum of the total number of votes cast in such city at the last preceding general election, and shall be filed in the office of the clerk of such city before the adoption of an ordinance or resolution making or authorizing such sale or lease. If such demand is filed, as aforesaid, such sale or lease of real estate or such franchise shall not take effect unless in addition to the foregoing requirements a majority of the electors voting thereon at such election shall vote in the affirmative."

The act takes effect immediately on its approval by the Governor.

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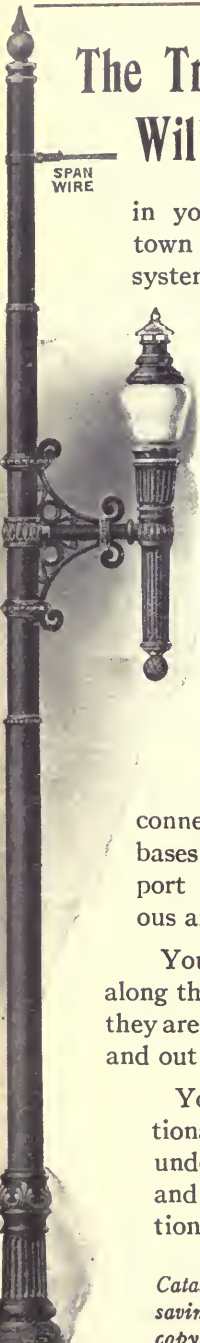
Another Town to Have a City Manager

Hickory, N. C., a town with a population of 3,716, has adopted the city manager plan on precisely the same lines as Sumter, S. C., the city which in January selected M. M. Worthington, a civil engineer, as its first city manager.

The election of the first city council under the new charter in Hickory will not take place until the last Monday in April, so that the policy of the city in securing its man-

The Trolley Company Will Co-operate

in your plan to give your town an up-to-date lighting system, and will let you use their trolley poles to secure a "white way."



ERECO Combination Railway and Lighting Poles

It is possible to utilize an ordinary street railway pole in connection with ornamental bases and brackets to support the new inverted luminous arc lamp.

You can string your wires along the top of the poles, where they are practically unnoticeable and out of the way of traffic.

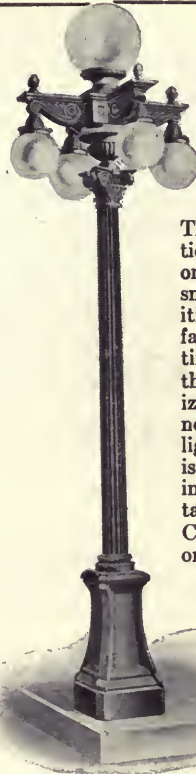
You save the cost of additional lamp standards and underground construction, and avoid further obstruction of the curb line.

Catalog "D" describes this money-saving ERECO Plan—write for a copy.

Design No. 10127

Electric Railway Equipment Co.
Cincinnati, Ohio

DESIGNERS MANUFACTURERS
N. Y. Office, 90 West Street 3



IN our Ionic Design we offer a standard that is not only ornamental but will give the most Uniform System of Street Lighting.

This Standard is fast revolutionizing street lighting in not only the larger cities but the smaller towns and municipalities and all are waking up to fact, that this means of beautifying the street is not beyond their reach. They are realizing that the small investment necessary to secure adequate lighting through our Standard is more than justified by the increased valuation of real estate on the streets affected.

Can be furnished as illustrated or with all lights turned upright.

Write for Prices and Catalogue
Illustrating Full Line

**The
Casey-Hedges Co.**

CHATTANOOGA, Tennessee

We are the Largest Producers of ORNAMENTAL LIGHTING FIXTURES

for exterior use in the
United States

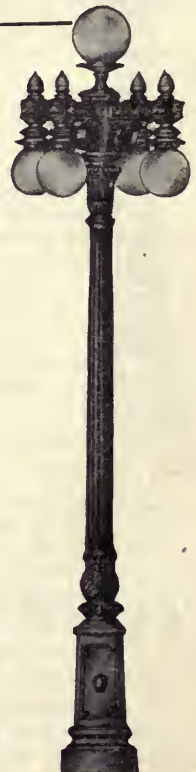
**WE MAKE A LIGHTING
POLE FOR EVERY
PURPOSE—ARC, TUNG-
STEN OR GAS.**

Unlimited facilities,
prompt deliveries, first-
class workmanship.
Over 500 designs to
select from. New cata-
logue now in press.

Write for one.

**The Elmer P. Morris
Iron Works**

92 West Street, New York



ager cannot be determined at this time. It is possible, however, that the selection will be made after advertisement, as was the case in Sumter.

Under the plan in use in these cities, the city manager is expected to be a good general executive and to have a general knowledge of engineering. The new Hickory charter makes the following specific provisions in regard to its city manager:

"Sec. 9. He shall have power to revoke licenses pending the action of the City Council.

"Sec. 10. He shall have authority and charge over all public works, the erection of buildings for the city, the making and construction of all improvements, paving, curbing, sidewalks, streets, bridges, viaducts, and the repair thereof; he shall approve all estimates of the cost of public works, and recommend to the City Council the acceptance and rejection of the work done or improvements made; he shall have control, management and direction of all public grounds, bridges, viaducts and public buildings; he shall have control of the location of street car tracks, telephone and telegraph poles and wires; he shall have charge of the water sheds from which the city takes its supply of water, pumping stations, pipe lines, filtering apparatus, and all other things connected with or incident to the proper supply of water for the city; and shall secure all rights of way and easements connected with the water works or sewerage systems or the extension of the streets, etc.

"All the powers enumerated, however, shall be exercised subject to the supervision and control of the City Council."

✦ ✦

The Houston Tax System Endorsed by the Voters

The municipal election in Houston, Texas, on March 4, was a striking endorsement of the method of taxation adopted for that city by Commissioner J. J. Pastoriza (see *THE AMERICAN CITY* for September, 1912, page 241). In his campaign for reelection, Mr. Pastoriza said that he was "willing to stand or fall on the Houston plan of taxation, particularly that part of it which exempts personal property, such as cash and household furniture, entirely from taxation, and that part of it which taxes buildings at from 25 to 33 1/3 per cent of their reproductive cost." He was returned to office by the largest vote given to any of the candidates for commissioner, and nearly double that cast for any defeated candidate.

Civic and Social Tours of Europe for 1913

To any who are considering the study of civic or social conditions in Europe during the coming summer, a booklet just issued by the International Civic Bureau will be of interest. The booklet contains the itinerary of four towns planned by the Bureau and a list of well-known authorities whose coöperation is promised in Germany, Austria, Belgium, Holland, France and England. The European leaders of the main civic tour will be Henry R. Aldridge, Secretary of the National Housing and Town Planning Reform Council of Great Britain; Edwin E. Slosson, Associate Editor of *The Independent*, New York, and Frederick M. Eliot of the Bureau of Research in Municipal Government, Harvard University. The Chairman of the Committee on Arrangements is Royal R. Miller, 1 Madison Avenue, New York.

✦ ✦

A Uniform Municipal Bond Statute

In accordance with suggestions made by Robert R. Reed at the 1912 convention of the Investment Bankers' Association of America,* a proposed municipal bond statute was drawn for introduction in New Jersey, and has been put in general form and issued as a pamphlet for careful reading. The proposed statute does not repeal existing statutes, but gives to municipalities an enabling act under which they may proceed without unreasonable delays or serious legal difficulties. It is believed that the simplicity of the proceedings and the business-like manner of issue will appeal to every municipal official who is in any way responsible for the proper issue of bonds, as well as to public-spirited citizens. Every reader of the bill is asked to make note of desirable suggestions in regard to the adoption of the act in his state, and then to communicate with Park Terrell, Manager Municipal Department, Columbia-Knickerbocker Trust Company, 60 Broadway, New York City, asking for a revised copy adapted to the conditions in the particular state. Such revised copy will be furnished, and then the matter should go to the proper committee of the legislature, with the strongest possible backing.

* See *THE AMERICAN CITY* for December, 1912, page 569.

Mott's Sanitary Drinking Fountains FOR HORSES

This fountain has two separate bowls for horses, each having a continuous overflow, on the principle of the Sanitary Bubbling Cup used in drinking fountains for humans.



Pl. 914-K.

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J. L. Mott Iron Works
ORNAMENTAL DEPT.
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NEWS *from the* MANUFACTURERS

METHODS
MATERIALS &
APPLIANCES

Proper Methods of Applying Non-Asphaltic Dust Preventives

IN a paper read by James Owen, Consulting Engineer, Montclair, N. J., before the last American Road Congress at Atlantic City, the following outline was given of the factors which should determine the use of dust-laying materials for surface application on macadam streets:

"Oils as dust suppressors were first used in Algeria by the French engineers; then the practice was initiated in California and spread rapidly wherever the dust clamor arose. The heavy asphaltum oils came into prominence and were extensively used for some years, but their application caused such deterioration of the surface by pitting and peeling that their use has been discouraged. Non-asphaltum oils are now under advisement, and a number of other materials, such as glutrin, calcium chloride, etc., have been extensively pushed and used.

"The factors determining the use of these materials are probably more pertinent to the case than a dissertation on the merits of each individual medium, and they may be briefly stated as follows:

"1. Cost—The lowest first price material may not always be the most economical.

"2. Efficacy in suppression of dust for the longest period for one application.

"3. The economy due to the fewer applications in the matter of maintenance.

"4. Comfort to the inhabitants in the way of odor and trackage of the media into houses by the feet.

"5. Damage to road surface by the application of the surfacing material.

"6. Damage to crops by the deposition of the material on fruit and vegetables.

"7. The result of the application of the particular coating to the particular aggregate.

"All these factors are vital and should be considered in the selection of any given materials."

The primary object of a dust preventive is, of course, the prevention of dust. That

this object shall be accomplished in an economical manner is important; but the other points mentioned by Mr. Owen should by no means be overlooked. The comfort of the residents along the street and of all who use the highway is well worth considering, as is also the effect of the materials on the road surface itself. In these two respects the claims of the non-asphaltic compounds are particularly strong.

As to the cost of these preparations per square yard of road surface and their value in dust suppression, a considerable variation in experience is reported. This is, no doubt, largely due to the wide differences existing between cities in amount and kind of traffic and in type and condition of road surfaces. But even these factors can scarcely account for the failure of some cities to approximate the exceedingly satisfactory results reported by others. It is evident, then, that failure to apply the compounds at the proper time or in the proper manner has in many cases prevented the desirable results which might otherwise have been secured.

Considering the problem from this point of view THE AMERICAN CITY has asked several of the leading manufacturers of dust preventives for a brief statement as to the proper methods of applying their own products; and it is believed that cities and towns using such compounds will profit by the following quotations from the replies which have been received:

Tasscoil

"Tasscoil is a clean, stainless, odorless oil for use on macadam, gravel or dirt roads. It will not track or spatter, but penetrates the

MOW YOUR LAWN QUICKER, CHEAPER, BETTER.

Here, at last, is the very machine that home owners, park superintendents, greens committeemen and others interested in big lawns or parks have been looking for. Never again is it necessary to have the lawn tracked up by horses pulling a lawn mower—nor need the beauty of your place be marred because the man-power mowers can cut so little in a day. With the

Brodesser Auto-Mower

the whole lawn can be mowed quicker, cheaper and better than you ever thought of. Cuts the grass and rolls the lawn in one operation. Easiest running, cleanest cutting power mower ever invented. Weighs only about 1200 lbs. and does not kill the grass. Simply and substantially made. Steers by means of front wheels. Three-point suspension gives flexibility. Is not expensive and will pay for itself by the great saving of labor.

Write today for free booklet

giving complete description and illustration. Mailed free.

**BRODESSER
MFG. CO.**

Milwaukee, Wis.



Capital and
Surplus
\$9,000,000

**COLUMBIA-
KNICKERBOCKER
TRUST
COMPANY**

Sixty
Broadway
New York

**SAFETY IS THE FIRST REQUISITE
IN THE ISSUE OF**

Municipal Bonds

THE VALUE OF CERTIFICATION
depends on the safeguards employed in
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Every practical safeguard adds to the
selling value.

Municipal Officials are invited to write for
particulars of a complete protective
method of issue.

**Park Terrell, Manager,
Municipal Department**

The COLEMAN Boulevard Lamp

A High Power Gasoline Street Light

**AS BRIGHT AS THE
ELECTRIC ARC**

It gives a strong, powerful, white
light. It is simple, durable and eco-
nomical. All night service, 5c. per
night; midnight service, 3c. per night.

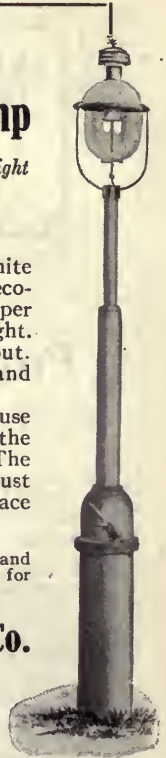
Nothing to wear out or rust out.
Made of cast iron, brass, copper and
glass. Absolutely storm-proof.

These lamps have been in use
over six years in many cities in the
United States and Canada. The
City of Des Moines, Iowa, has just
ordered 400 of them to replace
their "blinker" lamps.

Fully guaranteed and sent to towns and
cities on 30 days' free trial. Write for
catalogue and trial order blank.

The Hydro Carbon Co.

**TOLEDO, OHIO
WICHITA, KANSAS**



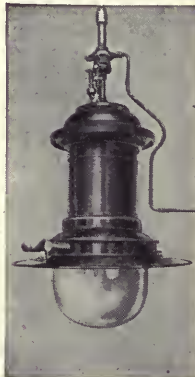
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27 years' experience in the manufacture
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such documents technically, as well as mechanically
perfect.

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next issue.

ALBERT B KING & CO INC

204 BROADWAY

ESTAB. 1886

NEW YORK CITY

road immediately, keeping it in a damp, resilient condition. One gallon will cover from 4 to 8 square yards, and on streets having an ordinary amount of traffic one application will usually last about three months.

"It is just as easy to apply Tasscoil as it is to apply water, no special oil distributor being necessary. Any ordinary street sprinkling cart will be found entirely satisfactory. If a city has two styles of sprinkling carts, one with a horizontal spray and the other with a vertical spray, the vertical spray is recommended, as a more even distribution can be obtained. On a street which is extremely dusty the first application should be fairly heavy and the second application lighter. There are no objectionable features connected with the application of Tasscoil, and it is especially recommended for streets having an ordinary amount of traffic, especially in residential sections, parks and cemeteries."

sprinkling cart, however, will not perform this function. The water in this case is simply poured on the road, where it stands in puddles until it dries out, causing a slippery mud in the first state, and a dusty, disintegrated road in the second. Calcium Chloride, on the other hand, penetrates the road itself, and, keeping the requisite moisture in it at all times, causes the whole road to pack and cement together, presenting a smooth, dustless, non-odorless surface.

"Calcium Chloride is ordinarily applied for the first time about the beginning of May, and, therefore, its season is a month to six weeks longer than other dustlayers, but even then it will be found that the total cost per season is extremely low, averaging from 2 to 3.5 cents per square yard.

"Calcium Chloride is also used to a large extent on brick and stone paving. It is extremely difficult to lay the dust under these



ENTRANCE TO OAKWOOD CEMETERY, CHICAGO, TREATED WITH TASSCOIL

Granulated Calcium Chloride

"The use of Granulated Calcium Chloride for the preservation of roads and the laying of dust combines exceptional efficiency of a non-odorless dust layer with a minimum of cost. It is especially effective in residential districts and parks.

"The preparation is applied by means of a simple horse-drawn spreader, costing in the neighborhood of \$40. With such a machine, two men can readily cover ten to fifteen blocks a day without hindrance to traffic or pedestrians. The theory of this process is extremely simple. It has long been recognized by our leading highway engineers that there are certain cementing qualities in the rock used for road construction that can be brought out with the proper use of water. The ordinary

conditions, as water either runs directly off the street or is quickly dried up. It has been found, however, that a weak solution of Calcium Chloride applied with an ordinary sprinkling cart will last for several days, in some cases over a week, depending, of course, on weather conditions.

"As a solution of Calcium Chloride is practically non-freezing, this latter process is very desirable in the cold winter weather before the snow comes. The refuse and dust are at these times blown about the streets to the great discomfort and injury to health of residents. As Calcium Chloride has been proved to be an excellent disinfectant, as well as a dust layer, it here answers two purposes.

"The objection has been raised by some city officials that it is necessary to apply Calcium Chloride more often than some other dust

Expert Valuations of City-Owned Property

Accurate information of the amount and value of property owned and used by municipalities, counties and boards of education, is being demanded, not only by bond buyers as indicative of the general prosperity and thrift of a community, but by the accounting officers themselves, who find it impossible to set up their city ledgers without such information. This information can only be obtained by an

Appraisal Made by Expert Appraisers

This company has just completed such an appraisal for the City of Cleveland, showing a value by items of \$40,728,079.51 of land and structures, exclusive of bridges. Just before the Cleveland appraisal this company appraised the land, buildings and equipment of the Pittsburgh school department, the value running over \$15,000,000. And just before the Pittsburgh appraisal this company appraised all of the property owned by Erie County, N. Y., in which Buffalo is located. This appraisal ran over \$15,000,000.

These appraisals were made for the purpose of accurate accounting, and in the cases of Pittsburgh and Erie County, for the purpose of ascertaining insurable values as well.

Scientific Land Appraisals

This company, in the Somers Unit System of Realty Valuation, operates the only method for valuing land by which every factor affecting value is set forth by itself, and its due mathematical effect computed. It is used in all land valuation for municipalities, and for condemnation of land for public purposes, and the values are based largely upon community opinion.

This company also furnishes services for the assistance of the assessment department of a city, by which the Somers System is used to equalize assessments when they are made and upon community opinion of value. If interested in this department write for a copy of the Somers System News.

For full information concerning this municipal appraisal service address

MANUFACTURERS' APPRAISAL COMPANY

WALTER W. POLLOCK, Pres. and Gen. Mgr.

Commercial Bank Building, CLEVELAND, OHIO

Branch Offices in New York, Philadelphia, Chicago, St. Louis and Indianapolis



A PARK ROAD IN INDIANAPOLIS TREATED WITH GRANULATED CALCIUM CHLORIDE

layers. This is sometimes true on streets exposed to very heavy traffic, but owing to the simplicity of application and low cost of the material it will be found at the end of the season that the cost per square yard is still extremely low, and the average per square yard for the actual time the treatment has been in operation will stand the closest comparison with any other practical dust layers on the market."

Dustoline for Roads

"The especial claims for the use of Dustoline are that it not only effectually lays the dust night and day, but that it does not stick to the shoes or stain clothes of pedestrians, does not track into houses, has practically no odor, and that it does not smut passing vehicles. Furthermore, while acting primarily as an unobjectionable dust preventive, it has proved itself a valuable road preserver.

"Dustoline is applied to the roads in the same condition as it flows from the tank car or barrel into the sprinkling cart, without heating or mixing with anything. To obtain the most economical results a wagon should be used where the spray can be regulated to emit as fine a spray and as evenly on the surface as possible. It flows as freely as water and penetrates the ground so quickly that within half an hour after application on a warm day the road surface has the same appearance as after a light summer shower.

"Another important item in the saving of expense is that the roads do not require any special treatment before applying Dustoline, neither do they have to be swept bare down to the stones in the bed of a macadam road. In fact, a small amount of top dressing, say from a quarter to a half inch, is preferred; this becomes saturated, forming a cushion which takes off the jar from heavy traffic and prevents raveling and loosening of the small stones beneath. The only real requisite in ap-

plying Dustoline is that the roads should be thoroughly dry when it is laid, so that it will immediately penetrate.

"On over 50 per cent of the macadam or gravel roads, composed of both heavily traveled business streets or lighter traveled residential avenues, one application has satisfactorily laid the dust for the season; on 30 to 40 per cent of the roads only two applications have been required; while on some few of the more heavily traveled short stretches around the depots or on business streets, three or possibly four applications have proved necessary.

"The official reports for 1912 from New Bedford, Mass., where Dustoline has been used for the last five years, show that on the 80 miles of roads one application of Dustoline, including material and labor of laying, cost them but \$0.00816 per square yard last year. These statements also show that examination of the road surface in the early spring, before the roads have been treated with any dust layer, indicate clearly that the Dustoline sprinkled there in former years still remains beneath the surface, so that roads treated one season require lighter treatments during subsequent seasons.

"Dustoline has been used for years on macadam, gravel and ordinary dirt roads, as well as on macadam roads where heavy asphalt and tar oils have been used, with most satisfactory results."

A Distinction Between Road Binders and Dust Preventives

"A marked distinction should be made between road builders or binders and dust preventives. Good road binders such as asphalt oils help to lessen the amount of dust; but on level, broad streets where there is mixed horse and automobile traffic, as soon as the surface becomes dry and hardens—which it does in a short time—dust is bound to arise from the



The Winged Message

Noah's messenger was a dove. In Solomon's time, pigeons were trained to carry messages. Brutus used them at the siege of Modena. They served the Turks in their fights against the Crusaders. In mediæval wars they were more useful than ever before.

France had a carrier-pigeon mail service, with messages reduced by photography and read through a microscope.

Even today carrier pigeons are utilized as news-bearers in isolated parts of Europe.

In America, the land of the telephone, the carrier pigeon is bred only for racing. The winged word has taken the place of the winged messenger.

Pigeons may fly more than a mile a minute, but the telephone is as quick as speech itself.

The dove is the emblem of peace. The telephone is the instrument of peace. The telephone lines of the Bell System unite a hundred million people in one national family.

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES**

One Policy

One System

Universal Service



MUNN AVENUE, EAST ORANGE, N. J., TREATED WITH DUSTOLINE

accumulating dirt from horse droppings and dirt dropped from wagons or tracked on in wet weather. If the street is to be kept dustless, treatment by water flushing or water sprinkling, or by a dust preventive, is necessary. The advantage of the latter is that it not only holds all the dust-producing powdered top dressing in a moist, not wet, condition on the surface, preventing the raising of dust and washing away by rains, but this moist cushion also absorbs future accumulations of dirt on it, thereby holding the dust from all causes and acting as a road binder and preserver."

How Costs Should Be Computed

"In arriving at the real economy of using different dust preventives, the proper figures for comparison should be the total cost of the different systems at the end of the season. The first cost per gallon is not the essential factor.

"In figuring the actual total cost of each system at the end of the season, this total cost should include the necessary preparation of the roadbed to receive the dust preventive, and the cost of material, including the cost of labor for laying the same. While a small pro-

portion of the most heavily traveled streets may require several applications, the large majority of the lesser traveled streets should require much less frequent applications. Therefore, to arrive at a proper comparative figure for any given city, the total cost for the entire season of preparation, material and labor should be divided by the total number of square yards treated."

Spraying Economy

By Melvin Gupstill

General Manager, Fitzhenry-Gupstill Company, Boston

THE time is rapidly passing when those intrusted with the care of our shade and park trees and forest reserves attempt to ignore the fact that spraying is one of their most important aids. Perhaps one of the best illustrations of the result of neglecting until too late this important work is the experience of a prominent university city which once boasted of its magnificent old elm trees and whose streets to-day are bordered with ugly stumps. This city has suffered the loss of its beautiful shade trees, because spraying was not started until it was too late, and has been put to the enormous expense of cutting down and replanting the infested district.

Garbage and Trash Cans

The heavy metal used in the construction of our Garbage Cans makes corrugations unnecessary, therefore producing a sanitary can by eliminating the dirt catching features.

Heavy Ash Can bottoms.

Extra deep Covers used.

By buying Rochester Made Garbage Cans, you have the best obtainable.

Send for catalogue.



Iron Horse Brand Metal Ware

Made by

ROCHESTER CAN COMPANY
ROCHESTER, NEW YORK

Public ? Health

Are you satisfied with Conditions in your locality ?
Try ILLUSTRATED LECTURES.

New, large illustrated catalogue of about 1,000 slides on the subjects of Flies, Mosquitoes, Mouth Hygiene, Tuberculosis, Infant Mortality, Water Supply, and other subjects. This catalogue of lantern slides sent for 4 cents in stamps. (Out April 1st.)

**EXHIBITS
ON THESE SUBJECTS
SUPPLIED**

Write for free catalogue of MATERIAL ON THE HOUSE-FLY and "WHO WAS TO BLAME."

EDUCATIONAL EXHIBITION CO.
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You can't

keep waste paper, fruit skins and other trash off your streets, park lawns and public grounds unless you provide proper receptacles.

If you will kindly send us your address and mention THE AMERICAN CITY we will gladly furnish desired information regarding trash receptacles, ash cans and garbage cans of all kinds, for parks, streets, public buildings and grounds.

American Can Co.
Toledo New York Chicago

LIST OF BOOKS ON MUNICIPAL AND CIVIC SUBJECTS FURNISHED
ON REQUEST BY THE AMERICAN CITY



THE RESULT OF THE RAVAGES OF THE
ELM-LEAF BEETLE

If the young trees are to live they must not only be cultivated and protected, but spraying must be resorted to, and at least 50 years will elapse before the community can again point with pride to its trees. Had the city started to spray two or three seasons earlier, it would still have the old trees and the cost of cutting and replanting would have been saved.

The prime essential in applying the several forms of arsenical compounds or fluid fungicides, which are acknowledged by our leading scientists as being the only method for controlling insect and fungus life, is an apparatus which will break up the fluid into a fine mist-like spray that will settle lightly upon the foliage, yet with sufficient force and quantity to coat thoroughly the leaves and fill the innermost crevices.

In fruit or crop spraying the best results are secured by what is termed "mist" spraying. This is accomplished by delivering the solution at a moderate pressure through a nozzle having a fine hole, which is usually fitted with some mechanical device for so spreading the spray that the greatest area may be covered at close range with the least amount of solution. This method is also the common method used by most of the park and shade tree commissions and city foresters outside of the eastern states. By it, unquestionably, good results may be secured; but in shade-tree spraying, where tall trees are treated and each tree must be climbed individually, it is too expensive for the average city or town to attempt any extended work. This often causes a limiting of the field of operation to the badly infested areas, with the result that little real suppressive or exterminative work is accomplished.

These facts led the late J. A. Pettigrew, in 1895, while superintendent of Prospect Park, Brooklyn, N. Y., to attempt spraying on a large scale by what he termed the "solid stream method." This he accomplished by rigging up a portable steam boiler and pump in connection with a watering cast and using an ordinary fire nozzle with a small bore. An interesting pamphlet dealing with this experiment was written by Dr. L. O. Howard and published by the United States Department of Agriculture in 1896. These experiments were continued by Mr. Pettigrew after he became superintendent of the Boston parks.

Little was really accomplished with this new type of spraying until 1905, when, owing to the serious outbreak of the gypsy moth in eastern Massachusetts, the great demand for a less expensive spraying method than the "mist" prompted the state authorities and several public-spirited citizens to conduct a series of experiments with "solid-stream" spraying. It was left, however, to a series of experiments conducted by the Massachusetts State Forester's Department to determine just what a machine of this type should be capable of to do effective work.

In the earlier experiments nothing above 225 pounds pump pressure was attempted, and until this day this pressure is often quoted as being the proper working pressure. From the later experiments, which were conducted along scientific lines, it was determined that the apparatus should be capable of maintaining at least 300 pounds per square inch on a $\frac{1}{4}$ -inch open-bore nozzle; with a lower pressure, after it has suffered the loss due to hose friction,



THE CITY OF BOSTON USES THE "SOLID-
STREAM" METHOD IN ITS SHADE-
TREE WORK

CLIMAX REFUSE CONTAINER

For Trash and Refuse in

Streets, Parks, Hospitals, Schools, etc.

Proof against flies, dogs, odors, wind, rain and fire.

Guaranteed to give satisfaction and to last longer than any other can.

CLIMAX REFUSE CONTAINER CO., 109 Broad St., N. Y. City

COMMISSIONERS, CITY FORESTERS, TREE WARDENS, PARK, STREET AND CEMETERY SUPERINTENDENTS

And others purchasing Nursery Stock for the ornamentation of public or private grounds will find it distinctly to their advantage to consult with us before placing their orders.

THE AMERICAN NURSERY COMPANY

Is the sales organization of two of the oldest, largest and most reputable nurseries in America to-day. The widest possible variety of **Deciduous Trees and Shrubs, Conifers, Dwarf and Specimen Evergreen Shrubs** (including many thousand home grown acclimatized **Rhododendrons**), **Herbaceous Perennials, Vines, etc.**, is available to select from, and no better stock of the kind is grown. Moreover, the prices are right.

Careful and prompt attention to all inquiries. Estimate figures cheerfully given on large or small lists of requirements

THE AMERICAN NURSERY COMPANY

SINGER BUILDING

NEW YORK CITY

When You Sow Dreer's Grass Seed

YOU sow a seed that is full of life and vigor.

Special brands for every purpose—sunny or shady places, lawns, terraces; for city, park and seashore use. All brands composed of choicest, re-cleaned seed, carefully blended, and tested for germination.

Write for prices or any desired information on lawn making. Special Grass Seed Circular—free.

DREER'S GARDEN BOOK FOR 1913 contains much information helpful to those interested in civic improvements which include flowers, shrubbery, etc. Sent free to anyone mentioning this publication.

HENRY A. DREER

714 Chestnut St.

Philadelphia

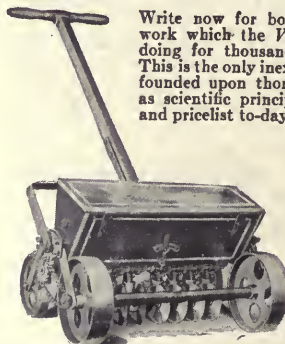
Sow Your Lawn Grass

**With the Right Tool
In the Right Way**

The Velvetlawn Grass Seeder quickly establishes beautiful lawns by putting seeds where you want them in just the right way. It drills the seed into the ground evenly and covers it uniformly. Birds, wind and rain cannot endanger lawns at seeding time where this unique machine is used. Guaranteed to do satisfactory work.

Our Special Booklet Tells

Write now for booklet C, describing the work which the *Velvetlawn Grass Seeder* is doing for thousands of enthusiastic users. This is the only inexpensive seeding machine founded upon thoroughly practical as well as scientific principles. Write for booklet and price list to-day.



**Velvetlawn
Seeder
Company
Springfield
Ohio**



OPERATING A POWER TRUCK SPRAYER IN THE SHADE-TREE WORK AT CANTON, MASS.

the solution is not delivered with sufficient force to properly break the stream into a fine mist after attaining its height. This method is sometimes unjustly criticised, because of attempts to do "solid-stream" work with machines designed for "mist" spraying.

For several years this high-duty spraying was confined to the gypsy moth-infested area in eastern Massachusetts, but through the energies of our entomologists it has been tried in several of our larger cities for elm leaf beetle spraying. Prior to these tests it was generally considered impossible to hold this insect in check unless the under side of the leaf was thoroughly coated with poison. This has been proven a false impression. If the foliage is coated, either top or bottom, while the adult beetles are feeding, they will be killed. Consequently, there will be no slugs to feed on the under side of the leaves.

For a city to attempt to cover its trees with the slow and expensive mist method in the limited time that the adult beetles are feeding would require an outfit which few are able to afford. On the other hand, with the "solid-stream" method and its rapid and effective work, by which large trees may

be sprayed for a few cents each, the problem assumes less gigantic proportions and the care of shade trees easily comes within the reach of even small communities.

✦ ✦

An Eastern Paving Brick Manufacturers' Association

The paving brick manufacturers who sell in the eastern territory met in Pittsburgh a few weeks ago, for the purpose of forming a paving brick manufacturers' association. C. P. Mayer, of the C. P. Mayer Brick Company, was made President; C. A. Young, of the Mack Manufacturing Company, Secretary, and A. G. McComb, of the American Sewer Pipe Company, Treasurer.

The objects of the association include the distribution of information as to cost, durability and light maintenance of brick streets; the drawing up of a universal selling contract; and the establishing of some standard of efficiency for paving blocks, thereby restraining some of the abuses now in vogue with certain engineers, and also restraining inferior materials from being shipped as first class by some few manufacturers.

✦ ✦

A New Motor Truck

The Tiffin Wagon Company, of Tiffin, Ohio, well known as manufacturers of municipal vehicles, automatic flushing machines, street sprinklers, and road building and contractors' equipment, have begun the manufacture of motor trucks. The first photograph of the one-ton truck is here reproduced. That the company is staking its reputation on a high standard of efficiency is evident from the following paragraph from its descriptive circular:

"The motor truck of to-day must comply with every requirement it is obligated for: It must carry every pound of the load up to and beyond its registered capacity, and without undue strain upon its power or mechanism. It must operate economically in its maintenance and be in service every day in the year, in



TIFFIN MOTOR TRUCK

To City Officials:

Remember

That Canton, Ohio, Shale is endorsed by Experts to be the best in the World for manufacturing Paving Brick and is used as a standard for quality in the U. S. Government Specifications for Paving Brick.

Every time your City uses "Metropolitan" Repressed or Wire-Cut-Lug Block, you get a permanent pavement.



Home of
"Best Paving Block Made"



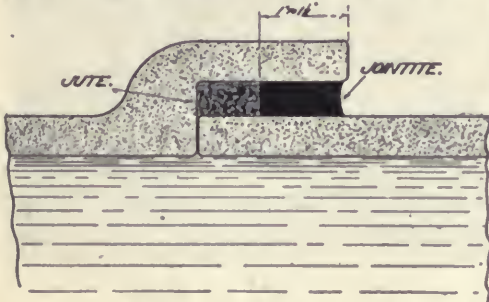
good or bad weather, over any and all kinds of roads, carry its maximum load through sand, mud and snow, and climb all the hills in its pathway."

✦ ✦

A Waterproof Sewer-joint Compound

With the sanitary sewer has come the problem of making tight joints, for it is obvious that a leaky sewer in connection with a pumping or treatment plant would cost a municipality a great deal of money. The amount of ground water that enters a sanitary sewer constructed with cement joints is often sufficient to entirely fill the lines. The reason for the failure of cement joints is due to the fact that the majority are poorly made, and those that are well made are easily broken by any deflection of the line caused by settlement.

The Pacific Flush Tank Company, of New York and Chicago, is marketing a material known as "Jointite," that has been used with great success for two years for making joints that will withstand pressure without leaking, and that will stay tight even if the line is distorted. This material is poured hot, in an



A JOINT MADE TIGHT WITH "JOINTITE"

exactly similar manner to that in which lead is poured in waterpipe joints, only that no calking is necessary. It adheres with great strength and has sufficient flexibility to prevent leakage when the pipes are deflected.

This compound has been used with economy in wet trench work, as it eliminates much trench pumping, and backfilling can be started as soon as the joints are made without fear of injury. The cost of such joints is somewhat more than cement in dry work, but for the reasons mentioned above a big saving may be made by its use where water is encountered.

Where sewers are laid near shade trees the roots often follow the water into the joints, sometimes completely stopping up the line. This has been prevented by the use of Jointite, as the compound is impervious and non-porous.

✦ ✦

W. C. Perkins Joins the Dunn Wire Cut Lug Brick Company

Announcement is made by the Dunn Wire Cut Lug Brick Company of the appointment of William C. Perkins, C. E., M. Am. Soc. C. E., as chief engineer of its inspection department. Mr. Perkins brings to the Dunn Company much valuable experience gained in his recent connection with the engineering work of the

New York State Highway Department and his previous experience for seven years as superintendent of construction in the Philadelphia parks.

✦ ✦

Westrumite Asphalt Pavements—Laid Cold

"A New Era in Paving" is the theme of a handsomely illustrated brochure published by the Westrumite Company, Fisher Building, Chicago. It is explained that an ordinary concrete mixer and roller comprise all the machinery necessary to lay asphalt pavements, no heating apparatus being required. Twenty-four full-page illustrations show methods of laying and views of typical streets where "Westrumite" is in use.

✦ ✦

An 85-foot Aerial Truck

The accompanying illustration is a reproduction of one of several striking photographs taken during the Webb Company's convention, February 19-22. The occasion was the annual gathering of the company's salesmen at



WEBB 85-FOOT AERIAL HOOK AND LADDER TRUCK, FULLY EXTENDED

300,000,000 WIRE-CUT-LUG BLOCKS



No. 3074. Buffalo-Glenwood Road. 21 miles long. New York State Highway. Constructed June, 1911. Photo June 8, 1912, at Station No. 369. 13 miles from Buffalo City Line.

Watch This List of Licensees Grow

| | | | |
|-------------------------|---|-----------------------------------|--------------------|
| During the year 1910 | { | Corry Brick and Tile Co..... | Corry, Pa. |
| | { | United Brick Co..... | Conneaut, Ohio |
| During the year 1911 | { | Kushequa Brick Co. | Kushequa, Pa. |
| | { | Sterling Brick Co. | Olean, N.Y. |
| | { | Reynoldsville Brick & Tile Co., | Reynoldsville, Pa. |
| | { | Danville Brick Co..... | Danville, Ill. |
| | { | Paterson Clay Products Co..... | Clearfield, Pa. |
| During 1912 | { | Wabash Clay Co..... | Veedersburg, Ind. |
| | { | Clinton Paving Brick Co..... | Clinton, Ind. |
| | { | Alton Brick Co..... | Alton, Ill. |
| | { | Deckman-Duty Brick Co..... | Cleveland, Ohio |
| | { | Tuna Valley Pressed Brick Co..... | Bradford, Pa. |
| | { | Foster Paving Block Co..... | Bradford, Pa. |
| | { | Metropolitan Paving Brick Co..... | Canton, Ohio |
| | { | Bessemer Limestone Co..... | Youngstown, Ohio |
| | { | Murphysboro Paving Brick Co., | Murphysboro, Ill. |
| | { | Binghamton Paving Block Co.... | Binghamton, N. Y. |
| | { | Peebles Paving Brick Co..... | Portsmouth, O. |

The combined output of these companies is 300 million blocks annually, or enough to pave a sixteen foot roadway 750-miles long. Hundreds of cities already have admitted Wire-Cut-Lug Block in their specifications and the number of city engineers recognizing their merit is growing. See that your specifications are right. Wire-Cut-Lug Block never have been rejected where submitted. Write us for further evidence.

THE DUNN WIRE-CUT-LUG BRICK CO.

CONNEAUT, OHIO

PATENTED IN THE UNITED STATES AND FOREIGN COUNTRIES

the manufacturing plant in Allentown, the meeting also being attended by some of the directors of the International Association of Fire Engineers and other fire chiefs and representatives of leading fire journals.

✦ ✦

"Great Money Energy for Individual and Public Welfare"

This is the title of a pamphlet issued last month by Albert H. Scherzer, President of the Scherzer Rolling Lift Bridge Company of Chicago. It is a strong plea for the expenditure of public funds in construction work of the kind which shall permanently advance the public welfare. According to figures given in the pamphlet, the expenditures of the Federal Government for constructive work (including the Panama Canal) represent only about 14 per cent of more than \$600,000,000 annual taxes. Mr. Scherzer's conclusions are, in part:

"The principal constructive duties entrusted to the United States Government are those relating to the improvement of the great rivers and harbors for maximum service and usefulness. The control of the Mississippi and other great rivers of the United States is a primary Federal duty, as these rivers extend through many states and carry interstate, international, intercontinental and interisland commerce. The Federal Government alone has the authority, money resources and ability at its command for the proper construction of these great works entrusted to it by the people.

"The deepening, straightening, improvement and regulating the outflow of the great rivers of the United States to obtain their maximum service for the benefit of the people will more than double the present national wealth of \$130,000,000,000, and the cost of performing

this work will be but a small fraction of the direct financial returns."

The pamphlet is illustrated with many interesting diagrams, including three contrasting circles, showing "The Good Citizen's Record," "A Typical City Record," and "The Federal Record."

✦ ✦

"Spraying a Profitable Investment"

The 1913 edition of this valuable booklet has been issued for free distribution by the Sherwin-Williams Company, of Cleveland, Ohio. A special chapter is devoted to insects injuring shade trees. The spraying of home orchards and gardens is also given considerable attention, and a chapter on "Importance of Pruning" has some helpful suggestions. Brief descriptions of the Sherwin-Williams line of insecticides and fungicides are contained in the booklet, as well as a spraying calendar and several pages properly ruled for a spraying record.

✦ ✦

"Everything Worth Planting"

This is the title of a catalogue issued by the F. W. Kelsey Nursery Company, with offices at 150 Broadway, New York. Handsomely illustrated, the catalogue is an excellent guide to leading varieties and specialties in trees, shrubs and hardy plants. The purpose of the company, as explained in the preface, is to furnish reliable nursery stock and fine specimens in the largest variety obtainable in the United States and in Europe from careful selection at the most favorable prices. To do this it contracts for its stock with a large number of expert and reliable growers and has stock especially grown for its own business.

APPLIANCES FOR CONTRACTORS AND BOARDS OF PUBLIC WORKS

Baker Road Machinery

The catalogue issued by the Baker Manufacturing Company, of 503 Hunter Building, Chicago, is well described on its title page as a book for reference on road building, surface ditching, irrigation, reclamation, railroad grading, snow moving, road maintenance, drainage work, seed bed border, irrigation, earth leveling and street cleaning. The catalogue is elaborately illustrated, many of the half-tones being from photographs of the machinery in actual operation. The last page has four illustrations of Baker's "Spotless-town" municipal sanitary safety galvanized clean-up cans.

A New Catalogue of Road-Building and Earth-Handling Machinery

An exceptionally well compiled catalogue has just been issued by the Russell Grader Manufacturing Company, of Minneapolis. In its 80 pages are contained more than 100 illustrations—many of them in colors—of the company's line of road-building and earth-handling machinery, culverts, culvert molds, steel beam bridges, etc. The descriptive matter is sufficiently detailed to give the reader an excellent idea of the distinctive features of the various implements and the method of operation. Several diagrams show cross sections of roads, embankments, ditches, etc., which may be constructed by the use of the Russell elevating grader.

BRICK

The Permanent Pavement

Following will be found
a Directory of some of
the well-known Manu-
facturers of Paving Brick
and Block.

Alton Brick Company

Repressed Block and Dunn Wire-Cut-Lug Block
ALTON, ILL.



Bessemer Limestone Company

YOUNGSTOWN, OHIO

*Repressed Bessemer Block and
Dunn Wire-Cut-Lug Blocks*

BIG FOUR CLAY COMPANY

CITY NATIONAL BANK BLDG.
CANTON, OHIO



BINGHAMTON PAVING BLOCK CO.

BINGHAMTON, N. Y.

MANUFACTURERS OF THE FOSTER BLOCK

Made Under the DUNN WIRE-CUT LUG LICENSE

WORKS: BINGHAMTON, N. Y.

OFFICE: BRADFORD, PA.

CLEARFIELD BRICK MANUFACTURING CO.

Shale and Fire Clay Paving Block

TWO PLANTS

LARGE CAPACITY

CLEARFIELD, PA.

THE CLEVELAND BRICK AND CLAY CO.

Office: Engineer's Building
CLEVELAND, O.



Getting Rid of Rock in Roads and Streets

In building roads it frequently happens that considerable amounts of rock must be moved. Boulders too large for handling must be split up, ledge raised to lower a grade, or deep cuts or even tunnels excavated. City water and street departments also encounter rock in excavating trenches for gas, sewer, or water pipes, or in quarrying road metal.

In such work the quantity of rock to be disposed of in any one place is not large, but it is scattered along a considerable distance, so that if power drills are to be used they must be easily moved about, together with the boiler or compressor that operates them.

For work of this kind the Sullivan Machinery Company, of Chicago, is manufacturing a portable drilling rig. Such an outfit as

loading a wagon with material shoveled in by hand the lower the top of its bed is from the ground, the quicker will the work be done and the greater will be the amount of work accomplished by men and team every day.

The "Kentucky" dump wagons for general purposes, with high wheels, short wheel base and short distance from ground to top of bed, are designated as Type "A." For excavating very deep cellars, hauling unbroken stone of large size, or garbage containing material likely to hang suspended on the rear axle within the bed, the manufacturers recommend Type "B." The wheel base of the latter is somewhat longer and the rear axle is immediately under the rear end of the bed, affording no obstruction to dumping stone of large size or garbage of any kind.



SULLIVAN "WK-3" PORTABLE COMPRESSOR AT MANCHESTER, N. H.

Sewer trench in the background

used by the Water Works Department of Manchester, N. H., is here shown. It consists of a Sullivan Class "WK-3" portable air compressor and two Sullivan hand-feed hammer drills, one weighing 40 pounds and the other 25 pounds in weight.

✦ ✦

"Kentucky" Dump Wagons

Two different types of "Kentucky" dump wagons in various sizes are illustrated and described in Catalogue No. 36, issued last month by the Kentucky Wagon Manufacturing Company of Louisville, Ky. It is pointed out in the catalogue that everybody knows that the higher the wheels and the shorter the wheel-base of a wagon, the lighter it will run and the longer the team used with it will remain serviceable. It is also generally known that in

A Road Machinery Reorganization

The American Road Machinery Company of Kennett Square, Pa., announces the purchase of the entire properties of the following companies:

American Road Machine Company, Kennett Square, Pa.; Climax Road Machine Company, Marathon, N. Y.; Indiana Road Machine Company, Fort Wayne, Ind.; Monarch Road Roller Company, Groton, N. Y.; Lima Contractors' Supply Company, Delphos, Ohio.

The new company has taken over all of the assets of the above-mentioned companies, and has assumed all their liabilities. These companies will be operated along the same lines as they have been hitherto, and will manufacture and sell under the same trade names as in the past.

CLINTON PAVING BRICK COMPANY :: Clinton, Indiana

are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire Cut Lug Block which is the acme of perfection for street paving material. Write us for samples and prices.

CLINTON PAVING BRICK COMPANY :: Clinton, Indiana

THE DANVILLE BRICK COMPANY

**Danville Repressed & Dunn's Wire-Cut-Lug Blocks
DANVILLE, ILL.**

"THE
BEST
BLOCK
MADE"



DECKMAN-DUTY BRICK CO.

Repressed and Dunn Wire-Cut-Lug
"Medal" Paving Block
CLEVELAND, O.

GLEN-GERY SHALE BRICK COMPANY

Manufacturers

Shale Paving Block and Brick

Large capacity.

READING, PENNA.

Hocking Valley Brick Company

HOCKING BLOCK

A High Class Shale Paver

PLANTS, Logan, Ohio

GENERAL OFFICE, Columbus, Ohio

Capacity Fifteen Million Annually



McAvoy Vitrified Brick Company

PHILADELPHIA, PA.

"McAVOY BLOCK"

Metropolitan Paving Brick Co.

"Best Paving Block Made"

CANTON . . . OHIO



MURPHYSBORO PAVING BRICK COMPANY

Equal to
the Best.

Repressed and Dunn Wire-Cut-Lug
Egyptian Paving Block.

Surpassed
by None.

MURPHYSBORO, ILLS.

PROMPT DELIVERIES.

LET US QUOTE YOU PRICES.

VOLUME VIII

NUMBER 5

The American City

NEW YORK

MAY, 1913

The American City Bureau

A New Factor in the Vitalizing of Commercial and Civic Organizations

IT has long been evident to the editors of THE AMERICAN CITY that the business associations of the country, with a number of striking exceptions, have failed to realize their opportunities for accelerating the movement toward civic betterment. Communications from many officers and members indicate that lack of a definite program is the rule; that, in the last analysis, such organizations too often exist, not because of any fundamental purpose, but rather because of the persistence of one or more leading spirits. Presumptive evidence of such a condition is seen in the custom of many organizations of exhibiting, as the great achievement of the year, a superlatively-adjectived come-to-our-city booklet which, with the alteration of a few pictures and figures, would fit almost as well any other city of similar size.

A noticeable change, however, is beginning to take place in the purposes and methods of these commercial organizations. Thus, in some cities, bombastic literature advertising "unequaled shipping facilities" is giving way to a scientific study of local industrial and civic conditions. Perfunctory statements of alleged reasons why industries should locate there are being superseded by facts as to housing conditions and supervision of the milk supply. Some of the funds formerly spent in the "entertainment" of visitors are being applied towards better recreation facilities for the city's present and future inhabitants. Instead of bonuses to attract factories, the modern movement seeks a sturdy, contented and intelligent citizenship. Throughout the country, in short, is being evidenced a steadily broadening view of civic opportunities for the capitalizing of ideals.

A Program of Public Service

BECAUSE of its unique position in the field of municipal research, and its close contact with this civic evolution, THE AMERICAN CITY has been called upon for an increasing measure of information and advice by commercial and civic organizations, as well as by municipal officials and public-spirited individuals. Recognition of the widespread need for such assistance has led to the formulation of plans for systematizing this service and making it available for the public at large; and from these plans has eventuated the AMERICAN CITY BUREAU.

Its aim will be to promote the prosperity and general welfare of municipalities of all sizes, and the health, safety and comfort of their citizens. The initiative may come from individuals, private societies or public officials; but wherever possible the ultimate object will be the coördination of these activities with the program of the leading business or civic organizations.

As a natural result of the lethargy into which many such bodies have fallen, the city desiring to formulate a community program often has as its first task the vitalizing of the organization by heroic measures. The need is usually for both men and money. Consequently the AMERICAN CITY BUREAU has equipped itself with a staff experienced in conducting membership campaigns and in the raising of funds for civic purposes.

When, however, the membership and income of an organization have been increased, the main functions of the AMERICAN CITY BUREAU will have only begun. The accumulated knowledge and experience of THE AMERICAN CITY will be

brought to bear upon the problems of that particular municipality, and a member of the BUREAU staff will give several weeks' assistance in preparing a program and perfecting plans for creating an efficient organization. Based upon a study of local needs, an organization will be effected with not only the commercial departments found in boards of trade generally, but also with departments of municipal welfare, whose work would cover such subjects as city planning, public health, franchises, taxation, municipal accounting, licenses, weights and measures, collection and disposal of ashes and garbage, sewerage systems, street cleaning, highway construction and maintenance, street lighting, transportation, traffic regulation, water supply, parks, schools, libraries, public recreation and the like.

The departmental classification will not aim to limit the scope of activities, but will indicate the possibilities for the chamber of commerce in carrying out the best tendencies in community progress. For the association as a whole, for the various departments, and for individual members, the AMERICAN CITY BUREAU will serve as a clearing house for information. One department of the BUREAU will furnish data in answer to inquiries. Another department will provide experts for studying the efficiency of city departments and for making surveys of local civic and social conditions. Still another department will supply photographs, charts and diagrams for civic exhibits; another will furnish lecturers and lantern slides for public meetings, and another will handle the sale of books and pamphlets on matters relating to applied municipal economics. In order that organizations may obtain the greatest potential advertisement of their civic advancement, the BUREAU will maintain a department for the preparation of publicity and the criticism of advertising plans; such work, however, being entirely independent of the editorial department of this magazine.

A Civic Opportunity

THUS the commercial association and the civic society will have available a BUREAU prepared both to establish the organization financially and to help it attain maximum efficiency in dealing with

the problems of the city. For illustration, let us assume that a membership campaign has been conducted for a board of trade, a reorganization has been effected, and the committee on public health has decided that the major achievement of the municipal affairs department must consist in bringing the local health conditions up to the standards of an efficient board of health. A study is made as to the methods, records and reports of the health department; likewise as to expenditures, ordinances, prosecutions, disinfection, nuisance complaints, plumbing, inspection of foods, tenement house conditions, mosquito reduction work, medical inspection of school children, and the like. Population, vital statistics and communicable diseases are studied by wards, age, periods, nationalities and occupations. The milk supply is studied as to bacteria counts, butter fat percentages, dairy inspection, inspection of milk stores, and similar controlling factors.

A health survey of this kind may end in a report and constructive recommendations to the chamber of commerce committee, or it may be followed by a health exhibit and lectures, installation of a library on public health, a publicity campaign for the betterment of local health conditions and advertisement of the progressive steps taken. The aim will be to allot each task to a specialist, on the assumption that only in exceptional instances can any one but an expert supervise intelligently studies concerned with more than one function of city government.

Until the formation of this BUREAU there had been no institution toward which organizations might turn for financial rehabilitation and for continuous guidance in justifying their existence; there had been no institution coöperating with municipal officials on the broad basis indicated in the plan of the new enterprise. In meeting these needs the BUREAU will become a clearing house for information concerning every activity making toward municipal improvements and community advance.

It will not, however, solicit philanthropic financial support for its own work. The various activities of the BUREAU must, therefore, be made self-maintaining; and the aim will be to render in every instance a service worth intrinsically much more than the amount charged.

ENGINEERING IN CITY PLANNING

The Fourth of a Series of Articles Embodying Some of the Many Practical Lessons which American Cities May Learn from European Practice

Articles in this series already published:

"Water Supply and Civic Fountains"—January, 1913

"Electric Lighting, Police and Fire Alarms"—February, 1913

"Street Fixtures and Furnishings"—March, 1913

Bridges and Bridge Approaches

By Frank Koester

Consulting Civic Engineer

OF all structures erected by man the bridge is possessed of the greatest individuality, unity and feeling. It is at once an inspiration and a utility; and it marks, as does no other structure, the progress of man from barbarism to civilization. It is one of his greatest triumphs over nature's obstacles, for it is an evidence not merely of his ability to construct—that is, to place one stone upon another—but of his ability to think and so to utilize the forces of nature as to place one stone upon another with nothing directly beneath.

A building can never produce the sense of unity afforded by a bridge, and thus can never inspire as the bridge does; indeed, the bridge occupies, among structures, a position approached only by the dam, to which, however, it is far superior, since the dam always lacks in the sense of self-evident security which the bridge imparts.

Not only is the bridge unique in its position among the works of man, but it is the largest single structure erected by him and the most costly. It is also highly important in point of numbers and in the investment involved. There are, for example, some 80,000 metal bridges in the United States, and they aggregate 1,400 miles in length—representing an investment of \$800,000,000,

or several times the cost of the Panama Canal.

The subject of bridges is, therefore, one which demands the most careful attention of all who have to deal with it. It is not a subject which should be reserved to the officials and engineers in charge, but is one in which the public should take an active and decisive interest. When a bridge of any consequence is to be erected, the designs should be open to public inspection and all objections and suggestions should be dealt with in advance.

All phases of the question should be considered—the esthetic appearance of the bridge, its engineering features, its location, capacity, future uses, cost of erection, operation costs, durability, materials and effect on the city's growth. Only after a thorough consideration of every feature should construction be proceeded with.

The pleasing psychological and esthetic effects of bridges have been recognized since the earliest times, but great bridges are a result of modern invention, being dependent upon the cheap production of steel for their evolution, since stone bridges have never been constructed in anything like the great spans of the modern steel bridges. The railroad, too, has greatly increased the necessity for bridges; so that, except for the comparatively small stone bridges of

* Copyright, 1913, by Frank Koester, New York.

ancient and medieval times, the principles of which were early mastered, bridge building is a modern science.

The success achieved has been little less than stupendous in a material and engineering sense, for enormous structures have been erected which meet the demands of traffic and the various conditions which were presented. In two respects, however, the modern bridge is for the most part a great failure; it is neither artistic nor will it have the long life of the ancient bridges. The Romans two thousand years ago built bridges which are in use to-day; but no modern metal bridge, even with the most careful attention, can be expected to last more than a small part of such a period. Even if protected from the action of the elements, the steel will be subject to crystallization from the effects of vibration. Thus all our steel bridges are temporary structures. This, however, will, in most cases, prove a matter of congratulation, for when they pass away they will be undoubtedly replaced by more artistic structures.

But the more striking defect in our bridge construction is the lack of artistic talent shown in their design. For the most

part they are like our skyscrapers—masterpieces of ugliness and purely utilitarian in every sense. In the pressure to get enough bridges built to accommodate the traffic, they have been built with little or no sense of esthetic effect, and are accordingly without beauty or individuality.

A bridge should be considered esthetically from three principal points of view: the bridge itself, the bridge in its relation to its approaches, and the whole effect of the bridge and its approaches in relation to its environment.

In its design a bridge should be regarded as an integral part of the city's plan, and it should be so located as to produce the most efficient and pleasing result. A bridge may, for example, serve as a terminal or focal point of an important avenue or for several converging avenues, full advantage thus being taken of its architectural importance.

Cooperation Needed Between Engineer and Architect

In order to achieve the proper result, it is necessary for the bridge engineer to cooperate with the architect in the design of the bridge and its approaches, and with the city planner or civic architect in its rela-



MAXIMILIAN BRIDGE LEADING TO THE MAXIMILIANEUM AT MUNICH



LUDWIG BRIDGE OVER THE RHINE AT WORMS
An example of the massive portal towers popular in Germany

tions to the plan of the city as a whole. Unless this is done, bridges will continue to be ugly, misplaced and ill suited to their purposes.

Numerous contributory causes, however, in addition to the lack of coöperation between engineer and architect, go to produce the inartistic effect so prevalent in American bridges. Among these are absence of governmental supervision, necessity of keeping cost at the minimum, legal hindrances, haste in construction, undue competition and use of contractor's plans or of one set of standard plans for numbers of bridges, imitation of railroad bridges for other places, and the absence of any well-settled forms for the artistic treatment of iron construction.

In the esthetic design of a bridge the first principle is that of unity. The bridge with its approaches should produce the impression of being a single homogenous structure. It should also show appropriateness to its surroundings; it should be symmetrical, harmonious in proportion, simple, obvious in the relation of its structure to its purposes, economical in the use of ma-

terial and embellished without over-ornamentation.

With the bridge itself constructed in accordance with such principles, its approaches should be treated in a similar spirit and made to add to the dignity and effect of the bridge. A plaza suitably laid out is almost a necessity for a bridge of any size, while a suitable view of the bridge as it is approached is another essential. The terminal plaza may even with good results be a park of some size, suitably laid out and embellished, and the bridge thus be given the benefit of a most favorable approach. In this respect, as well as in the matter of design itself, American engineers have much to learn from European practice.

Comparative Advantages of Different Types of Bridges

The principal types of bridges are the arch, the suspension, the cantilever and the truss. The selection of type will depend on natural conditions and on question of traffic, cost and materials. Thus a narrow stream with high banks over which a considerable vehicular traffic is to be carried

may well be bridged by a stone arch type, while a wide river with islands to be bridged for railroad purposes may best be spanned by a cantilever, especially if the swiftness of the current prevents the erection of the false-work so often necessary in the construction of an arch bridge.

Where the shores are such that it is undesirable to have the bridge roadway at sufficient height above the water level to clear vessels, lift bridges or draw bridges are erected, which, however, are a handicap both to navigation and traffic, and which should be avoided as much as possible. Notable among lift bridges is the Tower Bridge in London, which lifts the entire section of the bridge between two towers. The accompanying illustration shows a lift bridge of the lever arm type,



ELECTRICALLY-OPERATED LIFT BRIDGE AT THE HARBOR IN DUISBURG-RUHRORT, GERMANY

which requires but very little motive power.

While its first cost is great, the erection of a stone arch bridge should always be considered, where the span is not too great, since in artistic effect the stone bridge is most pleasing, and, when its centuries of



BRIDGE OVER THE RHINE AT DUSSELDORF

An appreciative municipality has appropriated many thousands of dollars to give this bridge a dignified architectural ensemble

permanency are considered, the cheapest in ultimate cost. A recent stone bridge with a span of 100 meters (328 feet) has been erected at Rome, which is the limit at present in size for this type.

In reinforced concrete bridges most artistic effects are possible. It is a new form of bridge, however, which requires the highest degree of skill both in design and construction, but in which splendid results have been obtained, exceeding in length the limit of stone bridges and having a graceful delicacy and loftiness of effect in remarkable contrast to the ponderous effect of the stone bridges.

The metal arch bridge is widely developed in a great variety of forms, with arches ranging up to 1,000 feet in length, as in the proposed Hell Gate Bridge, at New York City.

The cantilever form of bridge is the most difficult of all in which to obtain artistic effect, although good effects are not impossible. It readily admits long spans, however, and is often the type selected from commercial and utilitarian reasons. Generally speaking, the cantilever bridges are ugly, and not obviously disclosing their

principles in their construction, are but little understood by the public.

The suspension bridge is a form which is of great natural beauty and simplicity. It is particularly suitable to enormous spans, such as the Brooklyn Bridge, which is 1,595 feet between towers. It is a type, however, in which the weight of the bridge should be large in comparison with the live load carried, and is not, therefore, as readily suitable for small bridges.

The truss is a form for short and medium spans, and is widely used on railroad bridges. It is usually very ugly, but is cheap and efficient. Plate girder bridges, a form of truss, are used for very short spans, such as viaducts over streets, but if properly treated can be of a very ornamental effect.

A determining feature in the design of bridges is the relative position of the roadway, which may be placed at the top, at the bottom or intermediately. Old Roman stone arch bridges of semi-circular arch form, the only type of arch they built, with roadway at the top and numerous small spans in the center, have never been surpassed in substantial dignity and esthetic



AUGUSTUS BRIDGE, LEADING TO THEATERPLATZ, DRESDEN

A form of bridge which does not obstruct the view of the city



THE ELISABETH BRIDGE, BUDA-PEST

Recognized the world over as the finest type of suspension bridge

effect, though the ellipses and segments of circles used in modern arches are more graceful in effect. The suspension bridge is among the finest of the forms in which the roadway is at the bottom.

Although artistic bridges may appear to be more expensive than merely utilitarian structures, yet, with proper engineering skill, the material saved will often more than compensate for any extra cost of the artistic form.

The best method of securing the proper design of bridges is that followed to a large extent in Germany. Competitive plans are invited from engineering concerns of standing, having in view the purposes—esthetic appearance and approximate cost.

The three best plans are awarded prizes and upon being paid for become the property of the city, which thereupon calls for definite proposals for the erection of a bridge in accordance with first prize winning plan. The various competing concerns submit bids with detail drawings, and the best bidder is awarded the work. Thus it may happen, as it occasionally does, that the concern submitting the design adopted only gets the prize and not the contract for the erection of the bridge, although the prize-winning concern has much the best chance of being awarded the contract.

A system of this character would undoubtedly have the effect of greatly improving American bridges.



Some Fundamentals of Housing Reform*

By Dr. James Ford
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A HOUSING problem may be said to exist wherever any portion of a population dwells under conditions dangerous to health, safety or morality. The problem is present to some degree in every American city. It is usually occasioned primarily by the lack of guidance of urban growth, by poor planning of buildings, faulty construction and defective sanitation; it is aggravated by the greed of some landlords, the carelessness of some tenants and ignorance of the laws of hygiene on the part of both. The result of bad housing is ill health, both physical and moral, and thereby industrial inefficiency, unemployment, and a long chain of preventable social maladies, which are very costly to the community and which place a heavy handicap upon individual and social achievement.

Housing and Public Health

Man's dwelling exerts a marked influence upon his life and character. From one-third to one-half his time—and much more than half of the time of women and children—is spent in the home. Bad housing conditions affect health insidiously by slowly undermining the vitality and thus rendering the individual susceptible to disease. But bad housing conditions also constitute an environment favorable to the life and multiplication of the bacilli of a number of diseases. For example, the germ of pulmonary tuberculosis can live for years in a dark, damp, ill-ventilated and ill-kept environment—in other words, in basement dwellings, in dark halls and dark chambers. The bacillus of typhoid fever may not only be conveyed through the water or milk supply of a city, but it may also be carried by flies and vermin from the filth in which it was deposited to the food of urban households.

Thus a city with an insanitary water supply, or with manure pits and garbage pails uncovered in which the fly may breed

and privies in which the bacillus may be picked up, is an environment favorable to the spread of typhoid fever. The tenement house with its halls, stairs and water closets shared by many families becomes a sort of clearing-house of the contagious diseases—scarlet fever, measles, etc. The common water-closet may become the source of spread of venereal disease. The indiscriminate overcrowding of sleeping rooms by both sexes may result in the spread of the same diseases and also in an undermining of the health of adolescents and adults through neurasthenia and other diseases which over-stimulation of sexual instinct and its unsatisfactory fulfillment may occasion.

Housing and Public Safety

The safety of an urban population is in many ways affected by housing conditions. The overcrowding of lots with buildings erected of combustible material creates a serious conflagration risk, especially where buildings are of frame exterior or are used both as stores and dwellings, as is common in our large American cities. Fire escapes reduce the danger to tenants from fire, but improperly constructed fire escapes constitute a new risk from accident. The presence of stores, bakeries and work shops in non-fireproof tenement houses; the storage of combustible materials, such as rags, paints, etc.; the encumbrance of fire escapes; the proximity of railroads, and the manufacture of explosives—all affect in varying degree the safety of the tenant.

Housing and Morality

Intimately dependent upon the housing conditions is the morality of the population. The crowding of rooms with three or more members of a family, children of both sexes sleeping together or with parents, and the presence of lodgers within the tenement, make impossible the maintenance of high standards of personal decency. Premature knowledge of sex function by the children is the inevitable result of overcrowding, and often morbid stimulation of sex instincts, sex-perversion and vice originate in this room congestion. Yet indiscriminate

* Statements of principle, taken from a report on The Problem of Housing in Newark, prepared for E. P. Goodrich and George B. Ford for submission to the City Plan Commission of Newark, N. J.

crowding of sleeping rooms prevails very widely within the immigrant population groups of our cities. The dark halls and common toilets add to the menace for the growing children of the tenements; and frequently the presence of commercialized vice within residence quarters familiarizes the child with the worst element of our civilization before the child's mind is far enough developed to resist the superficial allurements.

Housing and Efficiency

A general reduction of vitality, or disease of any sort acquired through residence under conditions above described, results necessarily in reduction of industrial efficiency. Disease causes absence from work, which means reduced earnings, increased expenses, and perhaps also a long period of unemployment before new work is found. In extreme examples a state of mind which has been termed "slum disease" is apparent, in which individuals have become chronically indifferent or careless because they have found themselves unable to cope effectively with an always depressing environment. The serious effect of this attitude of mind upon industrial output is obvious.

Housing and Social Welfare

It is impossible to create a high civilization in a democracy where a large portion of the population must exert its entire life in struggling against destructive environmental conditions. The body is the tool of both mind and soul. A healthy body is the first requisite of the moral life. An individual can contribute little to the promotion of general well-being until rid of the weakness or pain which ill health causes. The essential prerequisite of efficient democracy is a healthful home life, with elimination of all the destructive elements now present in our slums and with the positive presence of the constructive elements—sanitation, safety, ventilation, sunlight, space, privacy and beauty.

Definition of Tenement House

Many progressive cities and states have discovered that it is essential to include the two-family house under the provisions of a Tenement House Act. It is possible today under most local building and sanitary codes to create living conditions in new two-family houses which would not be permitted in the new-law tenement, and

would be seriously detrimental to the health of occupants. The definition of a tenement house should include the two-family house, and should read in substance as follows:

"A tenement house is any house or building or portion thereof which is rented leased, let or hired out, to be occupied or is occupied, or is intended, arranged or designed to be occupied, as the home or residence of two or more families, living independently of each other, and includes apartment houses and flat houses, but does not include hotels. Dwelling houses occupied or intended to be occupied as the home or residence of one family or more, if built in rows, or with the side walls less than one foot distant from the nearest wall of another building; or if the halls, stairways, yard, cellar, water supply, water closets, or privies, or some of them are used in common; shall be deemed to be tenement houses and shall be subject to all the provisions of this act."

A definition substantially as given above has already been adopted by the following cities and states: Columbus, O.; Montreal, Que.; Chicago, Ill.; Milwaukee, Wis.; Toledo, O., and the state of Indiana (Act of 1909, Chap. 47), and has the approval of the National Housing Association.

The City Plan and the Housing Problem

The planning of cities involves the adjustment of the physical resources of the city to meet the needs of its population, present and future. The proper planning of cities may be made to affect housing conditions in a variety of ways. The functions of city planning may be considered conveniently under two captions. First, the remodeling of the old city, and second, the determination of the mode of development of new sections. Of these the first program is largely remedial in character, while the second is fundamentally preventive.

From the housing point of view the remodeling of portions of the city already built may not have a marked effect upon the dwelling conditions of the population in quarters so treated. In any district in which streets are widened or trees or grass strips are placed, impetus for the remodeling of old buildings is likely to be purely superficial. A new brick face may be placed on an old insanitary building. The dark room may remain. Still under such conditions, the occupants profit by an increase of light and air from the widened street, by purification of air where trees are placed and by the increased beauty of their outlook.

The Insanitary Area

City planning within the heart of a built-up city may also involve schemes for dealing in a large way with districts in which the houses are highly insanitary and are beyond repair, positively unsafe and dangerous to health and morality. There are many ways in which a district of this sort can be treated. First it may be neglected by health and tenement departments that are over-worked and unable to deal with a problem so large and apparently hopeless. In the second place an attempt might be made to repair the district, either at the cost of the city or by the city at the cost of the owners (the Birmingham method), or the owners might be ordered to make the necessary repairs at their own expense. Special powers would be necessary if either of the first two programs were undertaken. The third program would undoubtedly result in a patch-work reform. No one of these programs is adequate to deal with such districts; they are merely palliative and might reduce but would not destroy the disgrace of such a district.

Another possibility would be the complete destruction of the entire area by the city. This might be done with the intention of replacing the area with a park—as was done by New York City, for example, in the notorious Mulberry Bend—or the area could be rebuilt by the city with municipal dwellings or other buildings. The cost of the first half of this latter program renders it undesirable, if there are cheaper alternatives equally effective. As for the latter, municipal rebuilding of insanitary areas, even in London and Liverpool, where municipal housing is an accepted form of municipal business, has never proved a paying undertaking, chiefly for the following reasons:

1. The original cost of the land and destruction of the insanitary houses is either prohibitive or places a too heavy initial charge upon the undertaking.

2. It has been found impossible to build municipal tenements on the same area to house healthfully as many persons as were dishoused by the slum clearance scheme.

3. The original dishoused population tends to crowd with other families in small tenements while the area is being rebuilt, and does not return to the new buildings when completed, largely because the rents are inevitably higher than they were for the original accommodation.

4. It becomes profitable for a low class of

speculators to buy insanitary property and hold it unrepaired in the hope that the Government will purchase it for a slum clearance scheme of this sort, paying them, as is usually the case, more for the land and buildings than they are really worth.

Even if these arguments were not operative in American cities, municipal housing would for the present at least be undesirable, both because it is unnecessary (private capital can be relied upon to provide the necessary accommodations) and also because in our American cities we cannot guarantee the continued employment of expert men to operate a municipal housing department. Municipal housing will not pay where long tenure of office cannot be guaranteed to efficient administrators, or where politics and slender appropriations can ruin the work of competent administrators.

Taxation of Land Values

Another possible way of dealing with such an area deserves very serious and extensive consideration, and that is the use of a system of heavy taxation of land values or of the unearned increment. As these measures involve many other considerations besides those of housing, these other bearings of the subject should of course be studied with utmost care before the adoption of the scheme. As a fiscal measure, however, the taxation of the unearned increment from land values is, without doubt, a peculiarly just form of taxation and is calculated to bring large annual sums into the city treasury. There is no question that the community is chiefly responsible for increases in land values. It is just, therefore, for the community to appropriate such values, especially if it can do so without placing any hardship upon industry. The only serious difficulties arise in determining a practical method of appropriation and assessment. The diverse schemes of New Zealand, Germany, England and western Canada should, therefore, be studied, and the desirability of using one of these methods should be considered.

The application of a heavy tax on land values (Vancouver method) in the district under consideration [a district in which the value of the land far exceeds the value of improvement upon the land] would have a marked effect upon housing conditions, and would be the cheapest way (assuming that a just method of appropriation was found and employed) in which the

city could deal with this district. If the tax were taken off the buildings within such a district, and the entire tax was levied upon land, the owners of this property would find it unprofitable to hold their land in its present wretched state. If the entire tax of the city were levied upon land values, the owners of all property that is improved would find their taxes reduced, but the holders of vacant land or of land uneconomically developed would find their taxes increased, and would be confronted with the necessity of building or of selling to some individual who would be willing to build.

Importance of Radial Streets

The housing conditions of a city are affected materially by the street plan. If suburbs are not accessible directly and cheaply from the centers of industry and commerce, population will tend to crowd in tenements near the heart of the city. Suburbs are rendered especially accessible by means of broad, direct, radial streets, suggestively termed the arteries of the city. Many American cities are built upon a grid-iron plan of streets which renders certain suburbs peculiarly remote because accessible only by following two legs of a triangle instead of following directly upon the hypotenuse.

Tenement versus Cottage

The type of city plan which should be secured for your city must depend upon our answer to the question, what is the most desirable dwelling place, the tenement or the cottage? In the cities of the northeastern states we have become accustomed to the tenement house and do not ordinarily question its social utility. There is scarcely a city in the country that is attempting in any well-considered way to eliminate the tenement house, yet there can be no question but that it is an undesirable place of residence for families with children. Even for the childless family, the most expensive apartment house as well as the cheapest tenement may constitute an undesirable environment, because of the facility with which disease may pass from one apartment to its neighbor through the common hall and through the mediation of vermin which pass easily from one suite to another.

Where people live in apartments there is also concentration of population and hence much traffic in the neighboring streets,

which keeps the air full of dust and noise and thus renders apartment living undesirable. The sounds from neighboring apartments frequently make rest and quiet impossible. True privacy and solitude, though very important to the growth of the moral individual, are difficult to obtain. For the family with children the apartment is still less desirable. It becomes impossible for the mother of a family to choose her children's associates, to prevent her child from coming in contact with children or adults of unwholesome character who may reside within the same building. The mother cannot supervise the play of her child when outside of the apartment, and in general the atmosphere of the tenement or apartment house is one destined to create a race of adults that are unhealthful, puny and socially highly artificialized.

In the cottage, however, it is possible to obtain all necessary privacy for true home life and personal development. The reduced dust of suburban communities and the larger penetration of sunlight make cottage homes healthier living places for infants and growing children. The mother of the family, while at work in her kitchen, can supervise the play and the associates of her child in the garden. The adults of the family, if so inclined, can profit in health at least — and sometimes in economy — by cultivating a garden outside of working hours. The children gain the advantage and education that come from daily contact with the things of nature, especially through the garden. It is probable, therefore, that, at least for families with children, the suburban home is preferable to the tenement.

It is, however, impossible to house the population of large cities in cottage homes unless such homes can be constructed to rent for a price (including both the cost of land and of the daily transit to and from work) no higher than the same family would pay for an equal number of rooms within the city tenement. Furthermore, families working within the city will not live in the suburbs if a too large proportion of their working day is consumed in transit to and from such residence. If any working member of such family is employed for ten or twelve hours a day in the heart of the city, the residence should not be placed more than one-half hour's ride from the place of business. To secure cottage homes,

therefore, for the working classes of our cities, it is essential to have rapid and cheap transit, serving satisfactorily all of the possible outlying residential section, and it is equally necessary to have an abundance of cheap land and to make possible the cheap construction of cottage homes.

One means of encouraging cottage construction is to discourage tenement building. If, for example, we require tenement houses over four stories high to be constructed fireproof throughout, as do Philadelphia, Pittsburgh, Scranton, St. Paul and St. Louis—and require the three- or four-story tenements to have brick exterior, stairs, halls and fire towers—investors in house property will construct houses less than three stories in height because they will be comparatively cheaper in cost per unit of construction. The Massachusetts towns of Belmont, Arlington and Winthrop have eliminated the three-story tenement house for the future by requiring that every tenement house three stories in height shall be fireproof throughout. The cities above mentioned are all of them peculiarly free from high tenement houses.

The Zone System

The measures above indicated would tend to eliminate from your city all new construction of high tenement houses except for apartment houses of the well-to-do classes. They would not, however, absolutely prevent any man from constructing such apartment houses on any lot in the city or suburb which he might chance to own. It would still be possible for a man to place a high apartment house in the midst of a block of private residences, shutting out light from his neighbors' homes, marring the beauty of their outlook with the ugly back of his building and bringing into that street a class of population of different tastes and perhaps of a type from which neighboring parents would wish to protect their children. The city of Calgary, in Alberta, attempts to meet this difficulty by providing in its local building code that no owner shall build an apartment house within any city block unless two-thirds of the other owners in the block give their assent. This provision is, however, inequitable, in that it does not give all the persons who are interested in the erection of such apartment house an opportunity to vote. The owner of the property across the

street would be equally affected by the building of such apartment house; so, also, in less degree, would the passerby whose outlook may be marred by its erection.

To protect a community from the intrusion of undesirable building types, it might be desirable here, as in German cities, to establish a zone system of building. The essential feature of the zone system is that a city is divided into districts in which building types are permanently fixed. In the heart of the city the highest buildings may be erected (six stories, in the case of Vienna); in the next district, near the center of the city, buildings may be erected one story less high and perhaps covering a smaller proportion of their lot. In the third district will be found again a reduced height and a reduced percentage of lot area to be covered. In outlying districts, contiguous building, tenement construction or building to the lot line is not permitted, and frequently only 40 per cent of a lot may be covered.

The constitutionality of the zone system has been tested in Boston, which has two zones, one for building 125 feet high maximum, and the other with a maximum of 80 feet.

A zone system would inevitably involve the districting of factories if the welfare of the community is to be conserved. Where factories and tenements are mingled, the gases may render living conditions unhealthy or unpleasant. German cities very generally restrict their factories to quarters of the city in which available transportation facilities can be rendered of the best, and to quarters from which the prevailing winds will carry the smoke, dust, gases and noise away from the city.

Decentralization of Industry

One other adjustment of the factory and cottage home is ordinarily termed industrial decentralization. In England especially housing reformers have agitated for the removal of factories from cities into the open country where land is cheap and abundant, where transportation facilities can very frequently be rendered of the best and where each worker can live in a cottage home. Such industrial communities may be established coöperatively, as in the case of the British "Garden City," or may be established by the owners of factories, as is the current American practice, the houses

in this case being erected by the manufacturer either to rent or to sell on easy terms to his employees.

Three Methods of Reducing the Cost of Suburban Land

Cottage construction for working men is impossible at present wage rates unless land can be procured which is both accessible to work and cheap. Much of the suburban land in American cities is being held vacant to-day by speculators in the hope of reaping a large increase in land values. Accessible land is not easy to procure in small parcels. There are several ways, however, in which it may be rendered more available. German cities, for example, quite generally buy up their suburbs and then sell the land in small plots under heavy restrictions as to its future use or transfer, or else lease this land to builders on long term leases. By this means suburban land prices can be kept low, the city receiving the unearned increment of its land in the form of enjoyment of its proper usage as homes for working people, instead of receiving it in the form of taxes or rents. The city of Ulm, Germany, between the years 1891 and 1909, thus purchased 1,208 acres of land for \$1,390,000, and sold 404 acres under restrictions for \$1,633,000, thus reaping from its transaction 804 acres of land, \$242,000 in money and the lowest tax rate in Wurtemberg.

Land prices may be similarly restrained or communities can democratically share the advantages accruing from the unearned increment of land by means of coöperative development. The Copartnership Tenant Societies formed by artisans, mechanics and clerks in some twenty British cities have thus bought patches of suburban land, from 10 to 300 acres in size, at reduced cost per unit; have developed such land coöperatively at reduced cost per unit for architect's services, the laying of streets, plumbing, sewerage, etc.; have built their houses coöperatively, purchasing materials for fifty or more houses at once at considerably reduced costs. Each tenant pays rent for his cottage home to the Copartnership Tenant Society to which he and his neighbors belong, and receives his profits in the form of dividends on rents, paid not in cash but shares of stock in the Society. The unearned increment of the land is the common property of the coöperating members and

enhances their profits. The Harborne Copartnership Society in its garden suburb on the outskirts of Birmingham, England, was formed by workingmen who to-day pay rents for these cottage homes at rates no higher than they paid previously for insanitary slum tenements in the city. Yet this Society is already able to pay 8 per cent dividends on rents in addition to the regular 5 per cent interest on invested capital. The British workingmen have, however, had more experience in coöperative methods than have the American workingmen.

This method of cheapening and facilitating suburban development is not applicable here without an intermediate period of careful study of coöperative methods by the workingmen who plan the association, and preferably should not be tried until they have had some experience in some form of coöperative practice. Garden suburbs of this character in England and in Germany have been facilitated by cheap loans of capital from philanthropists and from the governments of these countries. If capital may be obtained from some source at 4 per cent interest for building loans, and if the experiment has the backing of influential citizens, it would be much easier to make it a success.

A third means of reducing the cost of land per cottage would be by use of the land tax already described. If the tax were taken off improvements and placed exclusively upon the land, the vacant land now held in the suburbs by speculators would be placed upon the market or built upon. It is probable that land under such conditions would be more readily available to modest purchases in the suburbs, and in so far would make suburban housing possible.

Residential Streets

Residential streets are often rendered costly through unnecessary width and through expensive provisions of curbs and sidewalks. Some residence streets must be used for a fairly large local traffic. Others are by their very nature and direction precluded from such use. A careful study of this problem will indicate that in certain suburban residential quarters the width of streets might easily be reduced to the provision of a 16 to 22 foot roadway flanked by grass strips. By establishing a building line on each side of such roadway at some distance from the street, it would be possible for the city to widen its streets without

serious expense if that should ever prove necessary. The provision of sidewalks on both sides of the street is also not invariably necessary in suburban quarters of this character where a street is purely local. Under such conditions, if the street is developed only to such degree as to render it adequate for its local service, the cost of street construction will constitute a much less burden upon home owners.

Size and Shape of Lots

There are several serious disadvantages in having lots of uniform shape. In the first place a popular prejudice is created for the deep and narrow lot which is not easily dislodged, and the poor man who wishes to build a cottage home is socially constrained to purchase a lot 100 feet deep whether he needs so much land or not. It is perhaps the safest thing for a city to have standard lots, at least in the heart of the city, until the science of lot distribution and usage is developed. It is not easy to make definitive prescriptions for the employment of lots of any other specific size which would be more satisfactory for all purposes. But the lack of elasticity in present lot shapes and sizes is fraught with serious consequences. The 25 by 100 foot lot cannot be used economically for workmen's cottages. It is wasteful of land at the rear, for the American workman will not ordinarily start a garden as will the English or Italian. It is parsimonious of land at the sides of houses, especially if built in the two-flat style. It becomes impossible to construct two-flat houses on lots of this shape which will not be too near to the lot line and thus to neighboring houses.

If the arterial streets of a city are broad and sufficiently straight, and there are occasional broad cross streets within the residential zones, it should be possible to plan much of the remaining residential land with narrow dirt streets for local service purely, often perhaps with one sidewalk or none, grass strips and trees at the sides and a building line for houses on abutting lots. These streets might wind, which would enhance their beauty; and if on a hillside, ought to wind in some accordance with the contour lines of the hill. In such quarters, lots of varying shapes and sizes would be possible.

Near factory quarters, where land values are not yet prohibitive, the Philadelphia type of housing might be promoted by the

establishment of lots even down to 14 to 16 feet in width and perhaps 40 feet deep, to be built up with four-room or six-room cottages, two stories in height, with brick dividing walls on the lot line. Houses of this type could be constructed so as to be available even for the families of day laborers, as the experience of Philadelphia has proved. Preferably if this type of house is to be used, builders should be provided by some competent authority with standard plans showing types of construction that are cheapest in design and at the same time healthful and varied in exterior. Multiple cottages of this type can be constructed to rent or to sell. Streets may be narrow without darkening rooms, but provision should be made for grass strips and trees on all streets of this character, relieving their monotony of type and improving the air for the semi-crowded occupants.

In the outlying portions of the city's contiguous suburbs, both straight and winding streets may be provided, and in specific quarters lots narrow or wide, shallow or deep, may be accepted according to the prospective use of the quarter. In general, however, the narrow lot should be avoided in such suburbs, and the permission to plot deep lots might be granted, or parks or allotment gardens planned in the center of certain blocks if the city guarded the right to push a minor street through the middle of the block in the future. Both one- and two-family houses could be constructed more economically and to greater social advantage on lots from 30 to 35 feet in width and 60 to 70 feet in depth than they can now on the 25 by 100 foot lot. On the wider lot, as specified, houses can be constructed with square floor plan, two rooms abreast and two or three rooms deep, reducing somewhat the cost of construction, the cost of heating and the cost of furnishing such homes. Furthermore, the lot 35 by 60 feet in dimensions uses 400 square feet less of land than the lot of 100 by 25 feet. On it a house may be built with two rooms of ordinary size abreast and yet leave 5 feet on the side to each lot line. The house may be built two rooms deep and leave a 10-foot lawn in front (insured by municipal provision for a building line) and a 25-foot yard in the rear, which may be encroached upon by a third room in the depth of the house or by a piazza, or may be used as a garden. The only serious dis-

advantage of this lot plan lies in that it provides for an increased street frontage, and thereby a larger cost to the owner for road construction, etc. But if street costs in residence sections are reduced by the means above specified, there will unquestionably be a net gain to society from the use of this method of platting.

Irregular lots on winding streets can be rendered economical and exceedingly beautiful if developed coöperatively in the manner already described. The British copartnership garden suburbs are so planned and yet are able to house workmen at current rates.

Public Supervision of Suburban Development

If your city is to determine its housing development, it is essential that there be a municipal commission empowered to establish the building zones of the city, to pass upon, and, if necessary, reject plans of land companies for estate development, to determine also the direction, width, paving and planting of new streets, with power to inaugurate schemes and enforce its decision in so far as they affect vitally the welfare of the community. There should be a permanent city plan commission for the metropolitan district, even if the suburbs of the city are not all (as they should be) incorporated within the political city. There is much European precedent for the establishment of such commissions with power. German cities are so provided. English cities under the town planning act of 1909 may secure power to regulate the methods and extent of development of land likely to be used for building purposes within, or in the neighborhood of, their area. They also have power to limit the number of buildings which may be erected per acre and the height and character of those buildings.

In America city planning powers of this type are already being given by provincial governments to the cities of Canada. In Ontario, for example, local town planning commissions have power to pass on all lot distribution of towns of 50,000 inhabitants or more, and cities may plan for the area within five miles of their limits. No lots may be sold until such plans are approved. The value of this power is reduced in so far as the promotion of workingmen's suburban homes is concerned by the requirement that all streets shall be at least 60 feet wide. The provinces of western

Canada have given quite similar power to their cities. In the states, somewhat similar powers have already been granted to cities in Pennsylvania and Wisconsin. And that power under the Wisconsin law regarding the platting of land near cities, adopted in 1909, extends to all land within one and one half miles of the limits of such cities.

The Cost of Cottage Construction

Suburban development will be encouraged not only by keeping low the price of land and restricting its use but also by any reduction that can be made in the cost of constructing cottage homes for working men. In general it is possible to construct tenement houses which shall be cheaper per unit of accommodation than cottage homes. This will probably not be true where tenement houses are required to be fireproof. It is, however, advisable for citizens who are aware of the urgency of their local housing problems to experiment in the construction of detached and multiple cottages. The best ability of architects in America has been turned to monumental work, but the important social problem of designing cheap cottages has been almost overlooked by them. In England the attention of the best architects has been turned to this problem by the holding of competitions with prizes for the best cottage constructed for a specified sum (£175 in the case of the first cheap cottages exhibition, Garden City, 1905). The purchase of the houses constructed may be guaranteed by the promoting body.

It would be desirable to interest the best trained architects of America in this problem, for by competition among them new arrangements of houses and new materials for construction will be brought to public attention. Such a competition might be held by a municipality (as, for example, one was held at Sheffield, England, in 1907), but such competition could be held with equal satisfaction by some private organization. It is in experiments of this sort that private organizations can do their best work in meeting the problem of promoting suburban housing. The cost of cottage construction may be reduced also by large scale building, buying and developing several acres of land at a time. This may be done by philanthropic associations, by employers of labor, by commercial building companies or by coöperative associations of tenants.



THE VISION OF THE KNIGHTS OF ST. JOHN

The Pageant of St. Johnsbury

Pageantry as a Constructive Force in Community Betterment

By William Chauncy Langdon

Master of the Pageant

THE pageant, often considered as a lovely dilettante entertainment, is in reality a constructive force equaled by no other for dealing with public problems. The word "problem" has in these days become too pathological in meaning. Education does not inhere chiefly in making up back lessons after school. The opportunities of money-making are not restricted to paying up old debts. Neither does the public-spirited activity of the normal citizen consist mainly in attention to the surgery and the cure of civic decay and disease. The real problem of every community is constructive rather than remedial or merely preventive. It calls for a study of the normal wholesome development of community life rather than for a study of its medicine. How can this town advance? This question should overshadow and absorb into its higher purpose all other emergency considerations.

At other times in our common progress as Americans, the thing to be accomplished has been to knit close the gains of a wide expansion, or to conserve the value of rapid achievements, making of them a

permanent heritage. But in these days the purpose that is essential to the right informing of vital citizenship is to effect an advance into a new era, into a larger, stronger, finer American solidarity. This work is constructive rather than redemptive, progressive rather than conservative, and by virtue of that very fact of being essentially constructive and progressive, thereby also supremely redemptive and conservative.

This is the point of view of three American pageants which are so closely related in character that they naturally form of themselves a series of Pageants of the New Country Life. These are the Pageant of Thetford (Vermont), 1911; the Pageant of St. Johnsbury (Vermont), 1912, and the Pageant of Meriden (New Hampshire), 1913. The Pageant of Thetford was a pageant of the farming of the new country life;¹ the Pageant of St. Johnsbury was a pageant of a metropolis of the,

¹ The drama, or as it is called in pageant parlance, the Book of the Words of the Pageant of Thetford (price 25 cents, postage 3 cents), may be obtained from Miss Margaret Fletcher, Secretary of the Pageant Committee, Thetford, Vermont.

new country life;² the Pageant of Meriden, a pageant of the education of the new country life.³ The importance of these three pageants lies in the fact that they are typical, that the towns are themselves representative, each in its kind, of other towns throughout New England and throughout the United States. The opportunity of Thetford, the responsibility of St. Johnsbury, the task of Meriden lie in equal degree before all the other American rural communities.

The Problem of St. Johnsbury

St. Johnsbury is a manufacturing town of about 8,000 people in the midst of a farming region in the northern part of Vermont. As a town it partakes to a considerable extent of the characteristics and advantages of city life. By reason of its situation in an agricultural region it shares the open country inspiration and difficulties of the surrounding farms. As the largest town of that section, it is the center and local source, not only of its marketing and banking, but of its educational, intellectual, cultural and spiritual life. Of this region it is the metropolis.

Since 1830, when Thaddeus Fairbanks invented the platform scale of commerce, St. Johnsbury has enjoyed uninterrupted prosperity. Industry, thrift, temperance and comfort are characteristic of it, and a progressive spirit follows in their train. Of problems in the narrower sense this manufacturing town has none. Its problem is apparently only that of the strong—"Ich dien!"—how it can effectively assist the neighboring communities to enter most fully into the superb joys and advantages of their membership in American life. The problem of St. Johnsbury lies in its inherent character as a metropolis rather than as a town. The *welfare* of St. Johnsbury is secure and snug; the *advance* of St. Johnsbury is tied up with the welfare of the agricultural region around it, and depends upon whether and to what extent it reaches out to assume the responsibility and take the leadership in their advance,

and thereby gives to these agricultural communities the highest and most lasting vision that art can express of the New America that lies but a little ahead of us.

Such is the problem of St. Johnsbury. There are no thrilling horrors to be abolished, no dragons or modern reform issues. It is a problem of dreams. "Except ye become as little children ye cannot enter the Kingdom of Heaven." The town has arrived at the border of the Kingdom. Can it enter in and inherit the perfect municipal citizenship? Has it the courage to reach up, to seize boldly its highest possibilities, and to lose itself in the completion of the life of those other, non-manufacturing agricultural villages and farms? Will it dare to stoop its head to assume its metropolitan crown? Of this advance the town has taken in its pageant one step. In this the town took stock of itself, to discern its character as a community, to "know itself," in Plato's phrase. The Pageant of St. Johnsbury was the dramatic mirror of this self-searching. It was the dramatic portrait of the town.

The Setting and Structure of the Pageant

In this actual working out of the pageant there were difficulties in plenty, some of the most material and forbidding kind. A false report of contagion seriously hampered the publicity, delayed the preparation and somewhat dampened the gathering enthusiasm. Many individuals also for a long time failed to grasp the significance of the thing for them and for their town. But all troubles and misunderstandings passed or were over-passed, and with the pageant days the town came into her own, and saw the vision of her history and character presented by her own people on the top of one of the hills that surround the town.

The pageant grounds were located on the summit of the Old Pine Hill. Immediately in front of the grandstand was a level greensward about 20 yards across, one of the greens of the golf-links. From this the hill sloped steeply up to a line of tall hemlocks and rock maples, which also extended down along the whole of the right-hand side. On the other side the audience looked down upon the town of St. Johnsbury below them, its roofs and steeples rising above the beautiful green masses of the shade trees, and across to the moun-

²The Book of the Words of the Pageant of St. Johnsbury (price 25 cents, postage 3 cents) may be obtained from Charles E. Peck, Secretary of the Pageant Committee, St. Johnsbury, Vermont.

³Information in regard to the Pageant of Meriden may be obtained by writing to Charles Alden Tracy, Chairman of the Pageant Committee, Kimball Union Academy, Meriden, New Hampshire. An article about this pageant will probably appear in a later number of this magazine.

tains on the other side of the valley.

It is becoming recognized that the pageant is itself a distinct art-form. All its parts are related in the dramatic unity of the whole. In the making of a pageant some of the phases require special attention under the direction of the Master of the Pageant. So at St. Johnsbury the music was in considerable measure specially written for the pageant by Brookes C. Peters, a local musician. The symbolic costumes were specially designed by Mrs. W. C. Langdon and made by the people themselves according to her instructions. And the dancing, both symbolic and folk, was trained and the solo dances performed by Miss Madeline Randall of St. Johnsbury. It is interesting and significant that, as a result of the dancing in the pageant, both folk dancing and dramatic dancing have been introduced into the public school system of St. Johnsbury under her direction.

In the structure of the pageant the realistic episodes, representing actual incidents of casual importance in the history of the town, were divided into groups by the symbolic scenes expressive of general conditions at intervals in the development of the community. The pageant opened with a crash of brass in the orchestra as the Spirit of the Wilderness, a ruthless burly giant clad in deerskins, came from the summit of the hill and summoned before



THE SOLO DANCES WERE PERFORMED BY MISS MADELINE RANDALL

him his subjects, the Spirits of the Mountains and the Forests, the Rivers and the Valleys. At the approach of Civilization a conflict ensues, in which she wins the valleys and the streams away from the Wilderness, while he retires to his fastness on the summit of the hill with his Spirits of the Forests and of the Mountains.

Then came the first of the white men into the valley in 1754, Stephen Nash and John Stark, with a party of rangers, attacking a body of Iroquois Indians who had invaded the neutral ground of Iroquois and Algonquins on a hunting trip. This was followed by Dr. Jonathan Arnold, member of the Congress from Rhode Island, the founder of the town, with his surveyors laying out the allotments of land. To his wife who climbs the hill from their rude cabin



THE QUIANT COSTUMES OF THE FOLK DANCES

beneath, Dr. Arnold points out, "All where you see those trees, that is where the town will be! My town! From the start we will divide it into small lots, each just sufficient for garden and necessary buildings. It will be a city, and the steeples and towers will rise up through the trees, all along there, as stately and fine as in Providence or Philadelphia." The third episode of this group of the early days presented a characteristic scene of the pioneer village, compiled from historic incidents, with the neighborhood surprise parties, the arrival of new settlers and the coming of that herald of the outer world, the Post, with his tin horn and his quaint humor.

But Dr. Arnold and his promising son, Josias Lyndon Arnold, men of effective vision, both died too soon. For a time it seemed that St. Johnsbury would never be more than a little farming hamlet. But the water-power of its three rivers turned the course of the town's life. This was expressed by a symbolic dance, in which a stream of River Spirits in blue poured down from among the Mountain and Forest Spirits and through the Fields and Valleys. The dark-clad, inscrutable capricious Spirit of the Future comes, showing favor first to the Fields and then to the Streams in turn until, finally deciding in favor of the water-power, she definitely joins the streams and with them pours over a little embankment on the hill, a gleaming waterfall as they all run out in their victorious exit.

The Growing Town

The next three realistic episodes show the causes of the town's rapid rise into prominence. The First Church (1809), when the nineteen godly men and women among the seven hundred people of the town declared in reply to a suggestion that they were too feeble to maintain a church, "This business must go on. We are too poor to live without the ordinances of the Gospel." In 1830 came the invention by Thaddeus Fairbanks, resulting from the need for better facilities for weighing hemp, which then seemed to be the great crop of the future. The contrast of the old wooden beam and the new platform scales was faithfully presented in the episode by old scales which needed only more or less repair to serve their purpose. A naïve humor, as of old days, gathered around

Thaddeus Fairbanks' confident declaration of faith in his new invention, re-spoken by his son in the episode, "I would not take \$1,000 for it right now!" The third episode of this group showed the Coming of the Railroad with its extraordinary enlarging of the town's horizon, the arrival of the first orange (an actual incident) and the rise of stock eight dollars in three months on the Boston market. The picture of manners in St. Johnsbury in 1850 culminated of course in the coming through the valley below the pageant grounds of the first train, constructed from pictures of its prototype, crawling along "at a tremendous speed," its bell ringing, its little whistle tooting, and smoke issuing from its curious-shaped smokestack! Religion, industrial invention and access to the world have made St. Johnsbury what it is.

With success and prosperity come strength, a larger understanding of life, and humor. The second interlude called attention in somewhat humorous vein to the world-wide mission of St. Johnsbury's chief product. The various nations of the world, all characteristically costumed, come in pairs to Uncle Sam to settle their commercial quarrels. He sends his little green-clad Rollo, Vermont, up to that town of his to get one of those things. Rollo soon returns with a miniature of the platform scales. With this Uncle Sam shows the nations how by accurate measurement they may settle their quarrels for themselves to the great advantage of business and the restoration of international friendship and joviality—all in pantomime to the tune of "Yankee Doodle."

The entrance of the town into its leadership is the subject of the next three episodes. In 1856 St. Johnsbury became the shire-town of Caledonia County. The message of this important event was told through the medium of the old Scotch foreman in charge of the removal of the bodies from the old burying ground to make way for the new county buildings. In his talk with passersby, with farmers, with a play-actor of the first show that came to town, with the judge of the court, was reflected the passing of an old and the coming of a new era for the town, and with it of new responsibilities. The Civil War episode showed the noble assumption of responsibility, as Erastus Fairbanks, of St. Johnsbury, the War Governor of Vermont,

sent the Third Vermont regiment to the front in 1861, while from the hill above some of the same Third Vermont veterans watched the performance of the episode performed in their honor.

Later came the period of agricultural depletion, resulting from the great industrial development, when many small farmers had to give up their farms and start life anew in the mill towns. So St. Johnsbury, like other manufacturing centers, became a refuge for them and opened to them new careers. St. Johnsbury also specially benefited by this industrial revolution, which brought with it an increased demand for St. Johnsbury's chief commodity, the scale. About this time foreigners came in large numbers. This episode, therefore, showed the welcomed arrival of such a small farmer from an agricultural township down the river, and the coming of a party of French Canadians. The interlude which followed celebrated the coming of these foreigners, and consisted of a series of folk dances by people of foreign nation-

ality who are now citizens of St. Johnsbury.

A Glorious Vision

The last group of episodes showed the power and the possibilities of the present. These episodes tended to merge into one another and become more and more idealistic. The Making of the Scales suggested the colossal character of the industry by the assembling for inspection of three of the larger types of scales, that is, within the limits imposed by the necessity of bringing the parts on by hand. While this is going on, Imagination, like a flash of sunlight, comes in silence out from among the trees on the hill above and watches the workmen. Then she calls forth from the top of the hill the Boy Scouts and the Camp Fire Girls, and from below the little children with their newly learned folk dances, the bird-walk of about twenty children with the Director of the Museum and the little dance-drama of how Spring drove the Winter away. So was set forth with right-



THE SETTING OF THE PAGEANT OF ST. JOHNSBURY



BIDDING GOOD-BYE TO THE THIRD VERMONT REGIMENT IN 1861

ful importance the place of the children in the issues of the present. Next, in an episode called *The Larger Responsibility*, came groups of men and women of the present, members of the Commercial Club and of the Women's Club of St. Johnsbury. While they were discussing their plans for the welfare of the town, a stranger came down from the grand stand, and, engaging a local man in conversation, talked with him pretty frankly about St. Johnsbury from the *noblesse oblige* point of view, what the town could do and be, if the town really arose and vigorously used its leadership in that part of the state for the welfare of its natural territory.

As the stranger, with his blunt faith in the town, goes back to the grand stand to see the rest of the pageant, from the tall forest trees that had echoed to the blows of Jonathan Arnold's axe comes Monsieur St. John de Crevecoeur, the French Consul of 1787 for whom the town was named. He greets the ladies and gentlemen of the last episode, but they naturally do not see him. He then goes over to a group of children who have remained playing there for some time. They see him and make friends with him very quickly. From his name and the name of their town, the conversation readily passes to St. John and the Perfect City he saw come down out of heaven, and to the Knights of St. John of Jerusalem in the Crusades. The orchestra begins very softly to play "Jerusalem the Golden." To the inquiry whether there can be Knights of St. Johnsbury, Crevecoeur assures them that there can be knights and ladies of

every town throughout the land. A little girl says she should like to see them. As they all gaze down into the valley at their town, she delightedly declares she does see them and that they are coming up there. Then as the orchestra more and more loudly plays "Jerusalem the Golden," up from the town, out of the valley, from out of the idealistic imagination of the children comes a medieval procession of Knights of St. John on horseback, thirty of them, in chain armor, with the red tunic and white eight-pointed cross on their breasts. A little boy and a little girl of the golden age run out to meet them and come back at the bridle rein of the Knight of St. John who is in the lead. So they stream up on to the pageant grounds and line the dark green forest, as the Knight of St. Johnsbury himself and his two little people go out to a prominence on the hillside directly facing the audience. From both sides all the people of the pageant pour in, filling the level space in front, singing as they come the Song to the Knight, one stanza of which reads:

"Lead, Ideal, lead where sings
O'er the clouds a perfect race,
Where the free-born eagle wings
Through his fields of golden space!"

As this song closes, America comes from the summit of the hill, attended by Vermont and a group of the other States. The Knight dismounts and, taking the two children by the hands, goes up the hill, kneels before America and performs the medieval ceremony of homage. Then, marshaled by St. John de Crevecoeur, all the

people of the pageant, all the generations of the town, march up the hill in review, past America and the States and the Knight of St. Johnsbury, singing as they go The Song to America, of which the first and last stanzas read:

"Forever shine on our mountain heights!
Forever dwell by our valley's streams!
And may thy stars illumine the nights
Where'er thy glorious banner gleams!"

"O God, who givest the breath of life
To peoples of the human race,
Make Thou our land, in peace or strife,
A nation strong of uplifted face!"

Progress of City Charter Reform

By H. S. Gilbertson

National Short Ballot Organization

THERE has probably never been a period of greater activity in the re-making of city charters than the past four months. Simplified organization, exemplified first in medium-sized cities in the Middle West, has very definitely spread its contagion to the cities of the metropolitan class, so that at present most of them have either just passed through or are in the midst of a constructive movement.

The most notable accessions of recent months are Denver, Colo., and Jersey City, N. J. Both cities have a population of over 200,000, and both have been particularly noted for the entrenchment of the political machines in their midst. Portland, Ore., votes on commission government on May 3 for the third time; the friends of the plan seem to be more united than formerly, and the hopes of success are correspondingly bright.

Some of the large cities, however, have not found it desirable to adopt, or even seriously to discuss, the commission plan in its orthodox form. Milwaukee and Cleveland seem to be headed toward what has come to be known as the "federal" plan, a simplified or Short Ballot form in which the membership of the council is reduced to widely proportions and the Mayor is continued as an independent elective officer with large powers of appointment. In this system all the minor administrative officials become appointive instead of elective, as formerly. The Milwaukee City Club presented bills in the legislature which would have put these reforms into operation locally, but its proposals were not favorably

received by the legislative committee. The Charter Committee in Cleveland is committed to the federal plan with non-partisan elections and a small council. Mayor Newton D. Baker and two other members of the convention are now preparing the final draft of the charter for ratification by the whole convention and submission to the people in June. The work of the Minneapolis and Detroit charter commissions is in an incomplete state. St. Louis will shortly vote upon the question of a charter convention.

* * *

Los Angeles voted on charter amendments on March 24 and adopted a number of amendments. These will have the effect of increasing the salaries of the principal officers, giving the city large powers of control over its public service and its highways, and increasing the city's general corporate powers. An amendment providing a form of proportional representation in the council was rejected.

* * *

The most fruitful single field of charter activity is the state of Ohio, where practically every one of the more important cities has taken steps to avail itself of the wide powers of municipal home rule conferred by the constitutional amendment adopted last fall. Dayton, Columbus, Akron, Middletown, Springfield, Salem, Youngstown, Ironton and a number of other cities either have charter conventions in actual session or will have within the next few weeks.

In Missouri and New Mexico—states which have heretofore been barred from progress toward simplified government by the lack of enabling legislation—state-wide laws have been passed, which will permit any of the important cities to adopt the commission plan by referendum. Fort Smith, Ark., has adopted the commission plan through a similar courtesy of the legislature.

Another new and surprisingly active field is Florida. The Pensacola charter has been passed by the people and only awaits favorable action by the legislature. Tampa recently voted down the plan by a rather narrow majority. The Orlando committee has reported favorably on this plan. St. Petersburg will choose between the commission and the city manager plans.

* * *

THE AMERICAN CITY has reported in previous issues the adoption of the "city manager" plan by Sumter, S. C. This news spread rapidly over the country and has been the occasion for a great deal of favorable comment. More definite, however, has been its influence on two other Southern towns, Hickory and Morganton, N. C. The former of these has adopted the city manager plan along the general lines of the Lockport bill, which was drawn and published two years ago. The Hickory charter then served as a model for Morganton. In this town the new plan is now in operation, the first election of commissioners having been held early in April.

But the idea is by no means confined to the South or to small communities. The Youngstown, Ohio, commission recently voted 10 to 2 to adopt the plan, with slight modifications, and in Dayton it is the only plan seriously discussed by the independent progressive element. The plan is one of three simplified forms, including the federal and commission schemes, embodied in a bill before the Ohio legislature. The city manager plan is incorporated, also, as one of six optional forms, in a bill in the New York legislature, which was introduced under the auspices of the Municipal Government Association of New York State.

Recently there has been introduced in the Wisconsin legislature a city manager bill

which, if adopted, will be a most unique piece of city legislation, in that it provides specifically that the city manager and the principal administrative officers need not be residents of the city, and that in order to secure applications for these positions the city council shall advertise in journals both of state and national circulation. This would be the German plan legalized. The lower house of the Minnesota legislature has passed a city manager bill fathered by Mr. Kerry Conley.

* * *

In El Reno, Okla., an amendment is under consideration whereby the commission plan in its regular form will be given up for the city manager scheme. The fact is that many of the commission-governed cities are finding the administrative organization defective in that it provides no single strong executive. The city manager plan corrects this shortcoming, while preserving intact all of the features of the commission plan which are intended to strengthen popular control.

But the difficulty with many of the commission-governed cities is not altogether a matter of general official organization. It is largely, too, a lack of consistency in carrying out the underlying principle of the commission plan, which demands that the responsible officers be given a great deal of latitude over all the processes of administration, including such matters as the budget and other instruments of functional control. Charter revision commissioners, with a lingering fondness for the system of "checks and balances," have felt it incumbent upon themselves to exercise their superior wisdom and incorporate more or less minute instructions to future generations, in the charter. This, of course, has the effect of making the charter inflexible, and the superficial critic of the local difficulties assumes that the trouble is with the commission plan itself. The National Municipal League, through its committee on administrative code, hopes within a few months to present a body of constructive suggestions on municipal codes and charters which will point out a method of relieving this situation. The writer will perhaps find occasion to discuss this plan at greater length in a future issue.



The Hydrolytic System of Sewage Tanks at Norwich, England

By Arthur E. Collins, M. Inst. C. E.

City Engineer, Norwich

THE principles of hydrolytic tank operation have been deduced from a prolonged study of sewage, and from exhaustive experiments relating to the special condition in which the suspended matters exist therein, as well as from extensive observations conducted at Hampton, Middlesex, England. The action of the tank will be more easily understood after consideration of some of the principles of sewage purification.

The liquid portion of sewage, having brought the impurities to the disposal works, has fulfilled its essential object. It is not, to any appreciable extent, beneficially affected by being submitted to a tank operation. The liquid, however, contains suspended solids of all grades which require to be eliminated. Some of these can be ar-

rested by an efficient tank operation; others are not depositable, under practical working conditions, unless brought into very intimate contact with surfaces.

The operation in ordinary settling tanks is a simple one, for there are only two forces at work—the onward flow of the liquid and the rising and falling of the lighter and heavier particles. The heavier solids reach the bottom of the liquid at variable distances along the tank. The result is a more or less rapidly rising floor of sludge, which diminishes the liquid capacity of the tank, increases the rapidity of the flow of the liquid through it and causes a larger proportion of suspended matters to pass out than is consistent with successful working. Therefore the operation has to be stopped and the tank cleaned out.



TRAVIS HYDROLYTIC TANKS, NORWICH, ENGLAND

Top of tanks when full

The Operation Occurring in Septic Tanks

In septic tanks the operation is a more complex one, there being super-added a third force resulting from the decomposition of the sludge. The septic operation has often been assumed to be a liquefactive one; but while some liquefaction does occur, the essential nature of the operation is a gasification. The formation of gas is markedly influenced by temperature conditions, being active in summer and practically dormant in winter, but the average for the year is approximately five per cent of the sewage flow. The depositing matters, expressed as dry solids, will rarely exceed one-half of one per cent, and will have to pass through the uprising gases. These gases, therefore, constitute a force opposed to and greater than that of the depositing solids. This complicates the operation and is the chief cause of the large proportion of suspended solids which characterize septic tank effluents.

As in the case of ordinary settling tanks, the operation of the septic tank is determined by the increasingly foul character of its effluent, occasioned mainly by the extensive sludge accumulations; and the desirability of some method of periodical sludge removal is apparent.

Special Features of the Hydrolytic Tank

The principles associated with the hydrolytic tank may now be considered. These are:

(1) To exclude from any prolonged tank operation as large a proportion of the liquid as possible.

(2) To effect the sedimentation of the depositable contents of the sewage in such a way as will avoid the rising floor of sludge, which has been seen to interfere with and to terminate other tank operations, by substituting therefor a disappearing floor of liquid which will increase the sedimentation efficiency and will make it perpetual.

(3) To separate the hostile forces of deposition and gaseous eruptions by limiting these operations to their own separate compartments.

(4) To prevent undue accumulations of scum and sludge by periodically withdrawing that proportion which the special method of operating the tank may dictate.

(5) To correct the frequent outrush of disturbed deposited matters, the result of

gaseous eruptions, by the re-deposition and removal of these solids in an additional chamber.

(6) To submit the entire volume of liquid to the attracting influences of self-cleansing surfaces in order to abstract as large a proportion of the finer suspended and colloidal solids as possible, and

(7) To maintain continuously the predetermined capacities of the tank.

The Norwich installation consists of four tanks, dealing with a volume of sewage averaging 3,000,000 gallons per day. The tanks have been constructed in accordance with the author's designs, prepared in collaboration with Dr. Travis, and have many new features of great interest.

Each tank is divided into three compartments by a longitudinal arch-shaped structure carrying two walls, the special form of which has been adopted for constructional reasons. The arch has openings at its springings and at its crown for liquid communication. The outlet end of the tank has a level weir which is common to the three compartments, but which is divided by the two walls, so as to apportion a definite width of weir to each of the compartments. The two side compartments are for the sedimentation of the sewage, and the central one for sludge collection and reduction. The last is wedge-shaped in transverse section in its lower part, in order to concentrate the sludge and to facilitate its removal.

The cross section of the hydrolytic tank is so admirable for insuring the rapid deposition and easy removal of the solids in suspension that it has been retained in the construction of the detritus tanks.

The sedimentation chambers are wedge-shaped in transverse section, and contain in their central three-fourths vertical splines of Jarrah wood, $1\frac{1}{2}$ -inch by $\frac{3}{4}$ -inch, placed 3 inches apart transversely, and from 5 to 9 inches longitudinally. The function of these splines is to attract the fine non-depositable suspended solids, and to insure the coagulation of some proportion of the matters in colloidal solution. They have, therefore, been called colloid collectors, or colloidors. The first and last portions of the chambers do not contain any colloidors, being devoted solely to the sedimentation of the heavier suspended and coagulated matters respectively. These chambers receive the entire flow of sewage. Of this

volume, 80 per cent traverses their entire length, and passes over their weirs in about four hours; while the remaining 20 per cent descends through the openings in the springings of the arch into the reduction chamber, and ascends through the openings in the crown of the arch to its weir, over which it passes in about twelve hours.

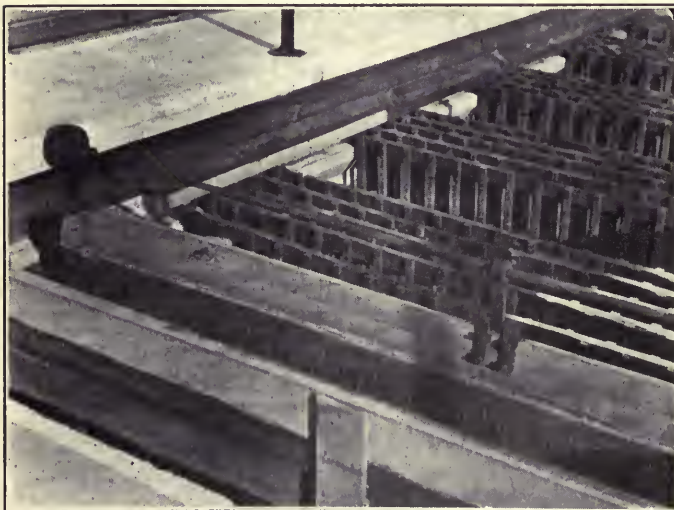
The larger volume in the sedimentation chambers is the equivalent of the contents of the upper two-thirds of their vertical height, and constitutes a forwardly moving force which projects the rising and falling particles some distance along the chambers. The very light suspended solids are carried to the surface, from which they are periodically removed through the scum outlet channels. The non-depositable solids are attracted to the colloids, and accumulate upon them, until their weight is in excess of the power of attraction, when they fall from them into the liquid below. The smaller volume occupies the lower one-third of the chambers, and into this the depositing solids fall, and by this they are conveyed into the reduction chamber.



SLUDGE CHAMBER IN THE NORWICH SEWAGE TANKS

These solids, therefore, have only to descend, in virtue of their own gravity, to the junction of the upper two-thirds with the lower third, before entering the volume of liquid which carries them out of the chambers as a concentrated sewage.

The liquid portion of the sewage also is of varying specific gravity. When it is heavier than the liquid contents of the chambers, it descends and traverses their lower limits to the end, and then rising upwards forces the lighter liquid over the weirs. When it is of lighter specific gravity, it rises and travels on the surface of the heavier liquid, which is gradually displaced downwards into the reduction chamber. So that, under all circumstances, the depositing solids and the heavier liquids pass through the openings into the reduction chamber, whilst the liquid containing the smallest amount of solids in solution passes out of the tank.



COLLOIDORS, TRAVELING SCUM BOARD AND BRUSH FOR CLEANING TOPS OF COLLOIDORS

The adaptability of these chambers to high rates of liquid flow can be easily understood, for if the contents of the upper two-thirds of the chambers pass rapidly through them, the contents of the

lower third, conveying the deposited solids, pass as rapidly out of the bottom of them.

The capacities of the chambers also are always maintained, for sludge neither collects nor forms in them except such as becomes attached to all surfaces, and as the surfaces herein are self-cleansing, the deposited matters fall away from them into the reduction chambers.

The *reduction chamber* receives the concentrated sewage, and has the rate of its liquid flow diminished to one-third of that in the sedimentation chambers in order to insure the deposition of the suspended matters into its lower part or sludge space. The action occurring in this chamber is a modified form of septic tank operation. There is the same continuous formation of gas; the more or less periodical discharge of the gas so formed; and the concomitant disturbance of the sludge. The forward movement of the liquid carries some small proportion of the disturbed deposited matter out of the chamber, as well as projects the re-depositing sludge some distance towards the outlet. The disturbance is, however, limited by reason of the smaller amount of sludge accumulations, owing to the periodical sludge withdrawals, and only applies to one-fifth of the sewage flow, and not to the entire volume, as in septic tanks. For whatever the disturbance in the reduction chamber may be, it is never communicated to the sedimentation chambers, nor do the gases which occasion the disturbance ever contaminate the liquid flowing through these chambers.

The periodical removal of sludge from the reduction chamber is rapidly and easily effected, for the floor of this chamber has been constructed as a series of inverted cones, having slopes of sufficient steepness, and provided with outlet valves. Numerous observations have shown that liquid will come through when the angle of the sludge surrounding the outlet valve approaches to from 20 to 30 degrees above the horizontal. It is, therefore, futile to attempt to remove the sludge from one outlet during the continuous work of a tank, and the efficient removal of sludge from flat-bottomed tanks becomes a matter of some difficulty.

The character of the operation can thus be seen to be brought under entire control. For if the chief desirability be to secure the maximum amount of sludge reduction, then a high sludge level must be maintained in

the chamber. If, on the other hand, it is necessary to minimize gas formation, and malodorous effluent, then the sludge accumulation must be kept down to its lowest possible limit.

The *hydrolysing chamber* receives the liquid flowing from the reduction chamber, in order to submit it to the attracting influence of colloids, and so as to correct the periodical issue of disturbed deposited matter from the latter chamber. Colloids are placed throughout the chamber, except in its lower part, which is reserved for sludge collection and withdrawal. The liquid enters towards the bottom of the chamber, flows forwards and upwards, between the colloids, to the weir, taking about four hours in its passage. The suspended solids carried over from the reduction chamber, and the matters arrested by and falling from the colloids, are periodically withdrawn through the sludge outlet valves. The scum forming on the liquid is also regularly removed to the scum channels.

Results in Norwich

The general operation of the tanks in Norwich has been uniformly successful. The average removal of solids amounts to between 90 and 94 per cent of the total contained solids of the crude sewage. No chemicals are used in the tanks.

The cost per annum of working the tanks and disposing of the sludge in trenches, including the digging of same, is somewhat less than £300.

When the tanks were first brought into operation, trouble was experienced by reason of the bad smell of the sludge produced. This has been got over as a result of experience in treating it on the land, it being run into trenches and covered with earth as soon as possible. This latter operation is not quite as simple as it sounds; for the sludge is of such a thin character that ordinarily it cannot be buried with earth, but has to be covered with litter first. Even then a heavy storm of rain will carry the covering to the bottom, leaving the sludge exposed.

Works have recently been completed for treating this sludge, the general process being as follows: Because of the presence of waste from starch manufacturing, brewing and other industries, and because of the extreme freshness of the

sludge from the Travis tanks our sludge is of a very mucilaginous character. It has, therefore, been found impracticable to filter it in ordinary filter presses, the sludge forcing its way through with the water. A process known as the Ekenburg wet carbonizing system subjects the sludge to a very high temperature while at the same time the pressure is maintained above what is necessary to prevent boiling. The pressure and temperature in the case of the Norwich sludge are above 300 pounds and 300 degrees Fahr. respectively. The effect is to change the character of the sludge from a mucus to a granular condition, after

which it is capable of being filtered in ordinary filter process. The cakes of sludge from the filter presses are broken up, passed through a Ruggles-Coles rotary drier, where the moisture is reduced to below 10 per cent. The dried cake is then put into a benzine plant, where the grease is extracted. The benzine is then evaporated from the degreased sludge, which is reduced to powder and bagged for sale as manure. The Norwich plant was the first to be commenced for this process, but another one has been erected at Huddersfield, Yorkshire. I understand the latter is more advanced than ours and has produced valuable grease and manure.

The Advantages of a Municipal Laboratory*

By W. E. Park, M. D.,
Commissioner of Health, Rockford, Ill.

THE municipal laboratory is a comparatively recent addition to the many important divisions of a well-regulated city. Its advantages as an adjunct to the health department have been established beyond cavil. Although the work which can be accomplished by such a laboratory embraces a multitude of activities, broadly speaking its functions are really two-fold—the prevention and control of disease. Its value, therefore, must necessarily be judged by the success or failure of the work achieved along these two lines.

The work of the laboratory in the prevention of disease can easily be summarized. Its chemical and bacteriological examination of water, milk, foodstuffs and air practically constitute its preventive possibilities. Of these, the testing of the water supply is without question the most important. In the laboratory, and only there, can the quality of the water supply be ascertained and controlled. The city that has its own laboratory in charge of an efficient bacteriologist and chemist is able, in a few hours, to determine whether its water is good or bad; and it can continue throughout the year periodic examinations, thus minimizing the hazard of a contaminated supply. Sewage, that fertile source

of typhoid, can be detected within twenty-four hours from the time the sample was collected.

Protection of the Milk Supply

In that it affects the next largest number of people, the quality of the milk supply is second in its relative importance. The bacteriological count of milk is a great subject in itself, and its constant control an absolute necessity to the public health. Here again the laboratory is the only place where this can be done. A high bacteria count in milk may mean any one, or all, of the following: Unclean production caused by unclean and diseased cows; unclean milkers, unclean pails, cans, milk wagons, bottles; unclean storage facilities; and carelessness about the all-important question of the temperature of milk. Milk should always be kept as cold as possible, as it is a well-established fact that bacteria multiply more rapidly the more tepid the temperature.

All that has here been said of milk applies with equal force, of course, to cream. Milk should be examined in the laboratory for the presence of fat, skimming, watering, dirt, preservatives; and cream for the presence of fat, dirt, homogenization of other fats than butter fat. It should also become the policy of public laboratories to make chemical examinations of prepared

* From a paper read before the Illinois Water Supply Association at the University of Illinois, March 11, 1913.

foods for infants, and of mother's milk, for the proportionate quantities of fat, sugar, proteids and ash.

The Testing of Foodstuffs

Now as to foodstuffs, the work that can be done, and the tests that may be made, are really only limited to the size and personnel of a laboratory. It is impossible to enumerate all the work along chemical and bacteriological lines which can be undertaken, but there are some things which should emphatically be undertaken:

Butter should be tested for fat, oleo oil and coloring.

Cheese should be tested for fat, acidity and general healthfulness.

Sausage and bologna, articles of food which easily lend themselves to adulteration, and because they are the poor man's food, should be tested for cereal fillers, chemical preservatives and cleanliness of casings.

Candy, the children's delight, which so often insidiously undermines the alimentary tract of the undeveloped child, should be tested for deleterious chemicals used in

flavoring, starch, dangerous coloring matter and solubility.

Vinegar, because it is quite frequently adulterated with sulphuric acid and coloring matter, should also be tested.

Ice cream should be tested for fat, fillers, flavors, quality of gelatine and other products used in its manufacture.

These are but a few of the more important foodstuffs which may be tested; but they are important, in that they may easily become the source of menace if not strictly pure and wholesome. Cleanliness in the manufacture and sale of other foodstuffs, such as bread, meat, vegetables and canned goods, is largely regulated by inspection, rather than by the work of the chemist and bacteriologist.

Air Testing

The testing of air in all buildings where public gatherings are held is a new and important work which should be undertaken in conjunction with the laboratory. Such tests may be made periodically by the chemist, and it should be the duty of the health department to cause changes in methods of ventilation to be made wherever it is found that



EAST END OF THE ROCKFORD MUNICIPAL LABORATORY



WEST END OF THE ROCKFORD MUNICIPAL LABORATORY

the air contains too high a percentage of carbon dioxide

The Control of Infectious Diseases

The advantages of a public laboratory in the prevention and control of infectious and contagious diseases are based on scientific fact. When a culture from a sore throat is submitted for test and the presence of the Klebs-Lefler bacilli is determined, it is positive that diphtheria is incipient or has developed; that the patient has become a carrier of that disease and a danger to the community's health, and should be isolated or quarantined. Until a negative culture is shown the patient should not be released. Thus, by this test the laboratory is instrumental in giving proof, and thereby control, of the disease.

The detection of typhoid by the Widal reaction, and the discovery of typhoid carriers; the examination of sputum of suspected tuberculars; the testing of smears for ophthalmia neonatorum, are also accomplished in the modern municipal laboratory.

This fact is salient concerning all the mentioned diseases—that the important

thing is to discover positive proof of the disease. Once the disease and source are discovered, the control is comparatively simple. In an effort to get quick proof of disease it is easily apparent that the department of health, no matter how great or expensive its laboratory equipment may be, must be aided by the physicians who come in personal contact with cases. The finest laboratory in the world is no bulwark of protection against the ravage of disease if physicians are not conscious of the solemn responsibility they owe society, in the prompt reporting of suspicious cases.

Do not be deceived into thinking that this is a subject that has been overdrawn. Remember that it is war—grim, bloody war—between the armies of Life and those of Death. Cities which yearly spend thousands upon thousands of dollars for such luxuries as parks and libraries, should not turn a wry face when the question of appropriating for a laboratory comes up.

Let not the laboratory be considered merely the study-room of the impractical, pedantic savant—let it rather be the battlefield upon which the shining sword of Science fights for human life and health.

The Cost of an Industrial Nuisance

By R. C. Benner, Ph. D.

Department of Industrial Research, University of Pittsburgh

THE smoke nuisance is beginning to be recognized as one of the greatest civic problems confronting the modern industrial community.

Why this crime of our cities is not remedied, when so doing would result in profit to all concerned, is a question that can be answered by the two words, *ignorance* and *carelessness*.

There is, of course, the excuse that in this case the damage done is obscure and difficult to prove in a tangible way. But as scientific studies of the problem are made, the injurious effects of smoke are gradually becoming more clearly defined and publicly recognized. There is a crying need for the education of the public along smoke lines. They need to know that soft coal can be

burned without smoke with profit to the consumer; and they need, likewise, to know the damage smoke does in dollars and cents to the residents of a smoky city.

It has been proven by the best mechanical engineers and government bureaus that the emission of black smoke means waste of fuel. Many men who have been compelled to make installations of the proper kind for the abatement of smoke say that such improvements have been big dividend payers from the start. In fact, the loss to the producer of the smoke nuisance forms the largest single item in our budget. This in Pittsburgh amounts to nearly \$4,000,000 per year.

One cannot reckon in figures the loss in personal efficiency. Those of us who are

called upon to travel about to any extent cannot fail to notice a marked difference in our feelings in different localities. In the sunny town with pure air we are so buoyed up that more and better work is accomplished. Getting back to the foggy, smoke-polluted atmosphere of our native city, there returns the dull, depressed feeling, due in great measure to the gloom, and the character and amount of work within our capabilities is greatly diminished. Carefully conducted experiments have shown that there is often two or three times as much light in the clear country surrounding a smoky city as in the city itself. This is due to the black pall hovering over the city. The cost of artificial illumination due to lack of sunlight is no small item, and the lighting bills for a large and smoky city are increased thousands of dollars.

Smoke is detrimental to health. Following the weekly course of mortality, one cannot fail to be struck with the manner in which the mortality from many respiratory diseases increases after a fog. The large amounts of soot (in one case, 10 grams, equivalent to about $\frac{3}{4}$ of a pint) found in the lungs of dwellers in a smoky city cannot but be detrimental, at least to some extent, to the execution of their normal function. Within the corporate limit of the city of Pittsburgh we have found that in those sections of the city where the soot cloud hangs heaviest the death rate from pneumonia is the greatest. Singers visiting Pittsburgh get the Pittsburgh sore throat. In fact, much of our throat trouble is caused by the smoke and dust in the atmosphere. This is a point to be taken into consideration in connection with city sanitation.

The question of household economics is of especial interest, particularly to the family of the middle class. Smoke lays tribute upon every householder by making his family living more costly. It is impossible to keep his belongings free from the thin film of dirt which he finds lodged everywhere. It has been found that it costs from one-third to one-half more for laundry work in Pittsburgh than in a smoke-free city. For men this means an addi-

tional cost of \$16 per year; for women, \$24; making a total of over \$1,500,000 which Pittsburgh pays as a toll in laundering and home washing bills. The bills for dry cleaning, papering, redecorating, extra expense of artificial illumination, etc., are raising the cost of our black smoke cloud almost beyond belief.

The damage to goods in stores, extra cleaning cost, etc., are not inconsiderable. To keep one of our office buildings clean an extra expenditure of \$16,000 is involved. The damage to goods in one of our large general stores is \$30,000 annually. Another spends \$700 every year for the washing of the outside of the store building.

From the standpoint of esthetics the damage is more pronounced than in any other phase of the problem. The smoke cloud continually hanging over our city is extremely injurious to all vegetation. Many trees and shrubs will not grow in the smoke-laden atmosphere, while those that do soon become so begrimed that their value from a decorative viewpoint is in great measure destroyed. The same can be said of flowers of all kinds. Carnations and roses do not thrive at all; others are stunted in their growth, and all soon become covered with a black coating of tar and soot.

Any attempt at permanent decoration is out of the question, for all tints soon become one color, either a dull gray or black. Temporary decoration in the shape of paint, etc., must be renewed at least once a year to keep it presentable. Building materials are limited to those which are not corroded by the acid associated with the soot and those which are readily cleaned. Metals corrode much faster and require most careful protection if a long life is wished for them. The question of both exterior and interior decoration is thus one most grievously concerned with the grime and dirt of soot.

The abolition of the smoke nuisance, therefore, unlike many other social evils against which an outcry has been made, will result in direct and immediate gain both to the public at large and to those chiefly responsible for the nuisance itself

Another article by Dr. Benner, on "Methods and Means of Smoke Abatement," will appear in an early issue.

Some Pitiful Examples of Neglected Trees

The accompanying group of views shows an effective method of calling attention to municipal neglect of shade trees adopted by the City Plans Commission of Salem, Mass. These and other illustrations, which tell a similar story, appear in the Commission's First Annual Report, presented to the

Mayor and Council of Salem on December 26, 1912.

In calling attention to certain neglected laws relating to shade trees, the report says:

"The Massachusetts Supreme Court has rendered a decision that no public service or pri-



WHY SALEM'S STREETS ARE BECOMING TREELESS

1. Abandoned horse chestnut. 2. Electric light wires did this. 3. A common sight in Salem. 4. Salem electric light pole permitted by the city. 5. Perhaps 15 years of municipal neglect. 6. Once a tree guard, now deliberate murder. 7, 8, and 9. Nearly ready to be cut down.

vate corporation has a right to trim trees without proper permission. It is also illegal to affix to any tree in a public way or place, a play-bill, announcement, notice, advertisement or other thing, whether written or otherwise, or cut, paint or mark such trees. It is illegal to hitch a horse to a public shade tree or injure it in any way."

Salem deserves the credit of being the

first city in Massachusetts to appoint a permanent city plans commission. In addition to the subject of trees, the above-mentioned report gives intelligent attention to the problems of housing the street system, water fronts and other subjects which the city must consider in the adoption of an official city plan.

The Relation of Sidewalks to Shade Tree Planting

By James L. Grimes

City Forester, Pittsburgh



BEFORE THE SHADE-TREE COMMISSION TOOK CHARGE



AFTER THE COMMISSION MOVED THE WALK

THE architectural value of a street depends upon the manner in which the sidewalk has been arranged. A street otherwise correctly planned and constructed may be ruined by a wrongly placed sidewalk. The reason why streets present numerous examples of poorly placed walks is that property owners are permitted freedom in the matter of sidewalk laying. Many city ordinances do not state where a walk shall be laid in the allowed space, and the result, therefore, is that a property owner places his sidewalk wherever he desires, producing a condition shown in the cut on the next page. This street is in a fine section of the city represented, and is a striking example of the carelessness displayed by citizens of intelligence in the matter of sidewalk laying.

The position of a sidewalk affects fundamentally the successful accomplishment of street tree planting. There are but three places where a walk may be placed: about the center of the allowed space, against the curb, or against the property. On account of a widespread ignorance of the impor-

tance of the matter, the general method is to place it directly in the center, or within two feet of the curb.

A 60-foot street has a sidewalk space 12 feet in width, while a 50-foot street has one of 10. Allowing for a 5-foot flagstone, the space remaining for parking is 7 feet or 5 feet respectively. This space, if kept intact, provides sufficient room for the successful planting of any species of shade trees. If, however, the walk is put down in the center, the 7-foot and 5-foot spaces are split in two sections, both of which are inadequate for the proper growth of a good tree. The habit of placing walks in the center, therefore, allows a perfectly good strip of land between the curb and walk, or between the walk and property, to be wasted, and the custom should be abolished. There remains a choice between the two other locations, concerning which opinion is divided. It is important for the future appearance of the street that an agreement upon one of these two disputed positions should be reached, otherwise a decidedly irregular walk will be the result.



ABSURD ARRANGEMENT OF SIDEWALK

Property owners should not be allowed unrestricted freedom in the matter of placing walks

Placing the Trees

The position of trees must now be either inside or outside the walk. It is agreed that inside planting improves the appearance of the property, but adds little to the appearance of the street; that outside planting improves directly the street alone. The ad-

vocates of curb sidewalks and inside planting state the following advantages: the trees require no guards, and the roots have more room; the trees are out of danger from vehicles; it does away with the keeping up of the outside parking space; more moisture is supplied the young trees, and



PROPERLY PLACED SIDEWALKS ON A NEW RESIDENCE STREET IN PITTSBURGH

there is less injury inflicted by wires, leaking gas and sewer mains.

Most of these claims are logical, but the street still shows a barren look, and an excessive width of paving without a break. Therefore, if the street is to be considered first, the proper position for the sidewalk is against the property, while the trees are placed near the outside line of the walk. The advantages of placing the sidewalk as far away from the curb as possible are as follows: the excessive expanse of bare asphalt is broken, thereby beautifying the street; pedestrians are not subject to being splashed by automobiles and trucks—the most serious indictment against curb-placed sidewalks; the shade trees hide, to a very great extent, the hideous poles lining the curb; the roots of trees are not so liable to injure the lawns of property holders by growing too close to the surface.

Where inside planting exists, the ter-

aces of lawns are bare of grass owing to excessive shade, and from the habit of persons resting upon them during hot weather.

How to Secure the Remedy

The matter of sidewalk laying, at least in residence districts, should be placed directly under the Board of Shade Tree Commissioners. No uniform result can ever be attained by allowing property owners to place them at will. A shade tree board is concerned directly with all the space lying between curb and property. Most shade tree acts grant jurisdiction as to cutting and proper replacing of walks where necessary for the planting of trees. This clause is sufficient to empower a commission to exercise jurisdiction over the laying of walks, and if the power is utilized the result will be beneficial to the section by the greatly improved and systematic appearance of the streets.

A Practical Recreation Building

By Roland Cotterill

Secretary, Seattle Park Commission

THE problem of providing a substantial yet economical field house or recreation building for use as a social center or in connection with a public playground is one which is confronting many small towns and cities which have observed the wonderful success of such institutions in Chicago and other large cities and have desired to keep pace in a measure with the present-day movement to provide modern recreation facilities.

The matter of expense both of construction and operation has been a barrier to many cities that have been ambitious to provide such buildings, but Seattle has demonstrated that a modern field house, practical in design and economical in operation, can be constructed for considerably less than the usual cost of such buildings and yet meet the requirements of the average community.

In 1911 the Seattle Park Commission sent its superintendent and secretary on an inspection trip to about fifteen American cities for the special study of field houses

and bath houses. The result of their investigation has been embodied in the construction of the Seattle type of field house and the bath house at Alki Beach.

These men were greatly impressed with the diversified facilities provided in the elaborate system of recreation buildings in Chicago. Smaller cities lack the means to provide such luxurious institutions, and it was necessary for Seattle to work out a modified type of building. A practical, economical and serviceable field house was planned by J. H. Stine, director of playgrounds, and local architects Bebb and Mendall, which embraces nearly all of the features of the Chicago buildings, and can be constructed and equipped for \$25,000, or about one-fourth of the cost of the Chicago buildings.

Four buildings of this type have been constructed in Seattle within the last year, and various authorities who have inspected them pronounce them model social center structures for the average city.

These buildings are of heavy frame,

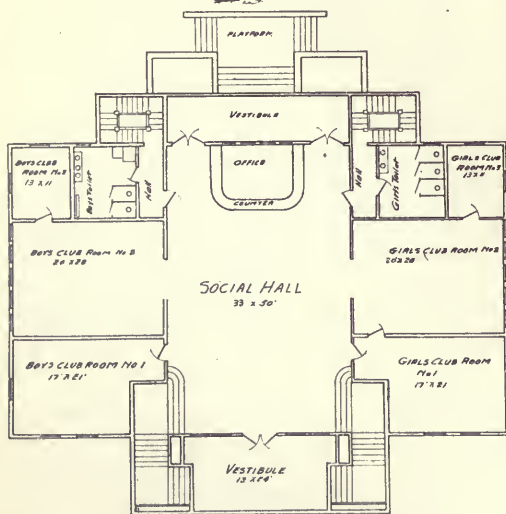


ONE OF THE NEW FIELD HOUSES IN SEATTLE

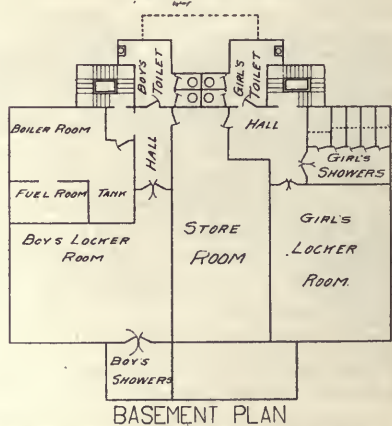
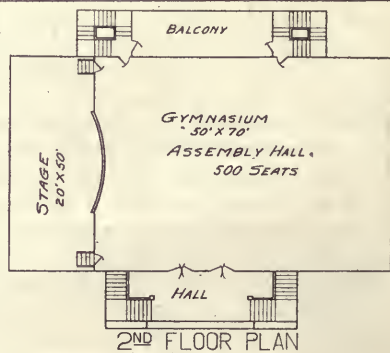
COLLINS FIELD HOUSE

PARK DEPARTMENT SEATTLE
OPENED 1913. COST \$22,800.00

MAIN FLOOR PLAN



TWO STORY FRAME AND BASEMENT
OUTSIDE PLASTERED, PEBBLE DASH FINISH.



slow-burning construction, with ornamental plaster exterior, two stories and basement, the general dimensions being 50 by 90 feet, exclusive of vestibules, porches, etc. In the basement are located boiler, fuel and storage rooms, while in opposite wings of the buildings are the locker rooms and shower baths for both men and women. On the main floor the central section is taken up with the general social hall and game room, with the supervisors' office facing thereon and stairways to the upper story leading out on either side. On each side of the social hall, occupying opposite wings of the building, are a group of club rooms for the various civic, social and educational organizations which develop in connection with social center work. There are separate quarters for men and women, although all of the rooms of the lower floor may be united by a system of sliding doors for any large function. The entire upper floor is given over to a combination gymnasium and auditorium, with a stage at one end with regulation proscenium arch and full scenic and electrical equipment. Separate stairways lead from each end of the



THE SOCIAL HALL AND OFFICE

gymnasium direct to the locker and shower rooms in the basement.

Gymnasium classes for people of all ages are conducted each week-day afternoon and on four evenings, two evenings being assigned for assembly purposes or social functions. Men and women and boys and girls utilize the gymnasium on alternate days. The combination gymnasium-auditorium is the feature which brought about the big saving over the Chicago type of building, which has separate gymnasiums for boys and girls as well as a separate assembly hall. While the separate units are preferable, a small city can successfully meet the requirements of its citizens by the combination arrangement, and a substantial

saving can be made both in initial cost and in operation. The operating force of this type of building consists of two janitors, two supervisors (man and woman), one special gymnasium instructor, one office attendant and one pianist, a total of seven people, a mere "skeleton crew" compared with the corps of people required to operate some of the Chicago buildings, although practically all of the facilities of the Chicago type of building are provided on a smaller scale.



THE GYMNASIUM IN THE COLLINS FIELD HOUSE

WHAT TO DO AND HOW TO DO IT

How to Co-operate Effectively in Public Health Work

By Ernest C. Levy, M. D.

Chief Health Officer, Richmond, Va.

OVER the entire country there is coming about a remarkable awakening of the people to the fact that they have their own part to perform in public affairs and that, without this coöperation, their public officers can not possibly get the best attainable results. While this is true to a greater or less extent in every department of municipal activity, it may safely be said that it has nowhere quite the same importance that it has in connection with public health work.

The reason for this is not hard to find. It is true that much of what a city can do for the protection of the health of its people is of a character such that ideal results can be secured without any sort of coöperation on their part. For example, where a city has had a dangerous water supply, nothing beyond the necessary funds and authority is needed to enable the city officials to install such a system of water purification as to cut down the death rate from typhoid fever and other water-borne diseases. This can be done not only without the coöperation of the people as a whole, but even in the face of active opposition on the part of many of them, and in the face of complete ignorance of the entire subject on the part of many more.

But most of the work of a public department of health is not of this kind. For example, no question of public health at the present time is attracting more attention than the relation between flies and disease. Here the public authorities can accomplish much. They can, for example, by adopting and enforcing rules and regulations for the construction and maintenance of horse stables and for the removal of manure, do much to limit the breeding of flies. They

can have a campaign of education—by newspaper articles, by talks to the school children, by public lectures, by having films and lantern slides shown at all motion picture theaters, with a lecturer from the department to give a running talk each time these are shown; by leaflets distributed throughout the city, by “fly-swatting” contests, and by dozens of other measures which will suggest themselves to every health officer.

But, when all is said and done, unless the people will themselves appreciate the importance of the house fly as a carrier of disease, and unless the head of each household will see to it that on his own premises flies can find neither food nor breeding place, and that such flies as gain entrance to his premises are promptly trapped and killed, the most energetic efforts of the health authorities can bring about only limited results.

This same principle applies to a large part of the work done by modern health departments. The first difficulty which is encountered in securing the coöperation which is so essential to success is the fact that the average citizen—even among the more intelligent classes—fails utterly to understand that the work of municipal health departments has been completely revolutionized within the past quarter of a century. Prior to that time this work was on the most empirical basis imaginable. Certain things were done because they had always been done, and because, in some way which no one could well explain, but which every one was expected to accept, these things were universally believed to have very direct and significant relation to the health of the people.

Few of the people of our cities to-day know that all this has been changed, and that sanitary practice at the present time is founded on sanitary science. Indeed, most of them are ignorant of the existence of sanitary science, while many seem to take the stand that the health officer who bases his work upon "science" of any kind is a mere theorist—a useless and costly man for work which consists only in removing dead animals from the streets, in making the people keep their back yards clean, and in imposing unnecessary hardships on them if they are unfortunate enough to have a case of contagious disease in their homes.

A Trained Sanitarian the First Essential

If the truth of the above be admitted, it is evident that the first move on the part of the people in any city to secure for their community the benefits which sanitary science can bestow, must of necessity be limited to a small intelligent and advanced group. If such a group of citizens, thoroughly in earnest, can be got together, there is no question as to what they should do first. They must realize, as stated above, that public health work to-day is founded on sanitary science and that knowledge of this science is neither innate nor is it a mere by-product of study or experience in the practice of medicine. They should, therefore, as their very first move, see whether their health officer is a trained sanitarian, and, if not, they must take the necessary steps to secure a proper man. To do this they must be prepared to offer the right man a number of things. Among these are a good salary, a position divorced from politics, a certain tenure of office so long as he makes good, a free hand in the carrying out of his policies and, lastly, the moral support of the best people in the community.

Having secured a good health officer—or having already such an officer—the next thing is to realize that, if he is the kind of man he should be, it is from him that suggestions for effective coöperation should come. In other words, while the people can be of inestimable service by coöperating with the health officer, they can, on the other hand, do only harm by endeavoring to take the lead themselves and to have the health officer merely coöperate with them. This point is so important that it will be discussed somewhat at length further on.

The ways in which citizens can coöperate with their health officer are very numerous. Most of them, however, can be covered by a general statement as to the nature of this coöperation.

Organization of some kind will naturally be necessary, and the question will at once arise whether it is best to start a public health league for this specific purpose or to work through some association already in existence—such as the chamber of commerce, the civic league, or some similar organization. This will have to be determined after careful consideration in each instance, remembering that the multiplication of associations is to-day going on at such a rate that a halt will soon have to be called.

The Community Must Be Aroused

Through whatever organization the work of coöperation is to be conducted, the next step is to start a campaign of publicity and education. The community must be aroused. The people must be made to realize that the best life insurance is not the kind which pays to one's family a certain sum of money in case of death, but is the kind which actually insures life, and with it health, by minimizing preventable illness and premature death. They must be taught that the premium which one pays for this kind of life insurance is very small. So far as money is concerned, even the best health departments to-day do not receive over fifty cents per capita from the citizens. If they were to receive one dollar per capita they could give more actual insurance than could be secured for many dollars paid to the best life insurance company in existence.

While it is not proper to measure the value of public health work solely by the money standard, nevertheless no method of presentation makes quite as great an impression on the public. For example, it can be shown by the most conservative estimate that in Richmond the work of the Health Department has prevented at least 120 deaths from typhoid fever in the last four years and at least 1,200 cases of this disease from which its victims could have recovered. This has meant a saving to the city of at least \$720,000, while during these four years the department has expended, for all purposes, a little over \$150,000. The Health Department has thus given the peo-

ple of Richmond a net profit of \$570,000 in four years from its work in connection with typhoid fever alone, without considering at all the value of what has been accomplished in other directions.

By giving publicity to statements such as the above, it is not difficult to show the people that in no direction do they receive greater returns from their taxes than from that portion which goes to the support of a well-organized health department.

In order for any group of citizens to give really effective coöperation, they must endeavor to become reasonably familiar with the principles of sanitary science and with the aims and methods of their own health department. They will then be in position to consider intelligently the new measures which their health officer wishes to put in operation and for which the support of the city council is sought and to decide for themselves how much health protection they are willing to pay for. Having decided this, they will then be in position to make their wishes known to the members of the city council, and, coming in this way, there is scarcely a city council in the country which would do otherwise than grant the support thus demanded.

In a similar way the people can assist the health officer greatly in securing the other kind of support which he needs from the city council—namely, the passage of such ordinances as are necessary to bring the benefits of sanitary science directly to the people.

So far the coöperation which has been considered has had in view the securing of a good health officer and ample support—both in funds and in the necessary ordinances—for the carrying on of his work. But this is only a start in the way of full coöperation. Public health measures have been defined as measures which all of us approve of having applied to our neighbors but which none of us wish to have imposed on ourselves. Even though this may be an exaggeration, it is nevertheless true that a considerable proportion of the daily acts of the health department work real or imaginary injury on certain persons or groups of persons. Limitation of space prevents elaboration of this idea. Since measures which are not approved by a majority of the people can never be more than indifferently enforced, nothing will be of greater service to any health officer than

what is pretty well covered by the term "moral support" on the part of the people. Every health officer is from time to time called on to take a stand of the most positive kind in meeting situations of a serious character. At such times the health officer who is haunted by doubts as to whether public sentiment will sustain him in the course which he knows he should follow is frightfully handicapped, while, on the other hand, the health officer who knows that the people will stand back of him in whatever course he believes to be right will be in a position to give to his community the best service that his profession can bestow.

Equally as important as the positive means of coöperation above discussed is what may be called negative coöperation—that is, the refraining from doing things which, though intended to be helpful, really hamper the health officer in his work.

Popular Articles Often Misleading

One of the results of the tremendous wave of interest in public health matters which has swept over the country has been that many persons believe their reading of popular articles on this subject in magazines and newspapers has qualified them as experts in sanitary science, or in some of its branches, at any rate. Many of these articles are positively misleading. Even were they all scientifically correct, nevertheless the person who derives his knowledge solely from such reading will seldom, if ever, have a correct conception of the actual and relative importance of the many measures of public health (many of them little more than interesting fads) which are written up in the press.

For example, the average citizen believes that a campaign for pure food is perhaps the most important of all health measures. As a matter of fact, at least half of the agitation on this subject is useless, while at least nine-tenths of it has no relation whatsoever to public health. Yet some misguided citizen, full of zeal and enthusiasm, may readily get the people to follow him in a campaign which consumes much time that might have been better employed, and which involves perhaps the expenditure of relatively large sums in order to accomplish results which, from the standpoint of public health, are practically *nil*.

And the harm, so far as the local health

department is concerned, will often go further; for it may well be that such a campaign creates so insistent a demand that thousands of dollars are appropriated to the health department for continuing this work along lines which the health officer knows perfectly well will not save one life or prevent one case of illness a year. This in itself would not be a serious matter but for the fact that one of the results will almost certainly be to render it very difficult, if not impossible, for the health officer to secure the funds which he urgently needs for the starting of some really important work which he has in mind, some measure which would save many lives and prevent much illness.

Finally, negative coöperation may be shown in still other ways. Every health officer is greatly hampered by insufficient funds, and, in consequence, insufficient help. This means that he must regularly

devote more or less of his own time to matters which could be equally well attended to by some subordinate officer. The city is thereby deprived of the benefits which would come from the health officer's being able to give this time to work which he alone is capable of doing. This being so, it is easy to see the harm which is done by those citizens who insist on having the health officer himself listen to their trivial complaints about the condition of a neighbor's back yard or who insist on a personal interview with the health officer in connection with matters which the desk clerk in any well-organized health department is thoroughly able to refer at once to the proper officer. By exercising a little common sense in matters of this kind, the citizens in any community can indirectly add greatly to the efficiency of their health officer by giving him more time for his real work.

Necessity for System in Place of Guesswork for Real Estate Assessments*

IS there any civilized process, on which great results depend, that is performed in such a slipshod way as the average tax appraisal?

That is the question inevitably suggested by the accompanying cartoon. The teller counts; the surveyor measures; the freight man weighs; the contractor figures; the chemist analyzes.

The assessor is the only man who guesses.

Imagine a life insurance company whose agents guessed at the probable length of life in store for each applicant and fixed the rate of premium each must pay!

Such an agent might be a rigidly honest man, and yet it would be strange if he did not sometimes fix more favorable rates for his friends than for clients whom he disliked or did not know at all.

Similarly it must be borne in mind that the assessor who does a seeming injustice between taxpayers has nothing to guide

him but his impulses, and it would be strange if he did not yield to human nature once in a while.

We can all see where a life insurance company would arrive which lacked mortality tables and was dependent upon agents' guess work. It would go out of business.

The government cannot go out of business. That is the only reason why ordinary assessment methods pass muster.

This parallel also affords an answer to those who assert that land values are too indefinite to be measured by mathematical rules.

Is anything under heaven more uncertain than human life? Yet actuaries more than 100 years ago reduced the probabilities of human life to a set of mathematical tables. In the assessing world the subject is infinitely more certain and more susceptible of mathematical treatment. Sources of value are simple and understandable when rightly approached. Community opinion of unit values varies but little, and the dis-

* Reprinted, with the accompanying cartoon, from the *Somers System News* for March, 1913.

tribution of that value to various properties is simply arithmetic.

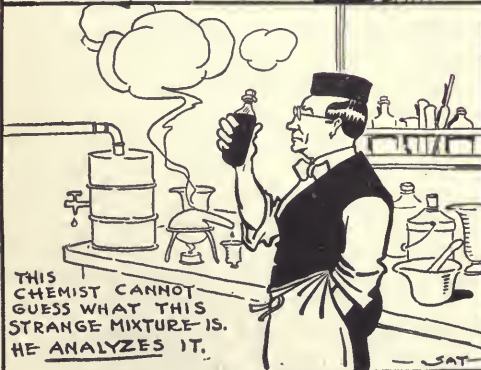
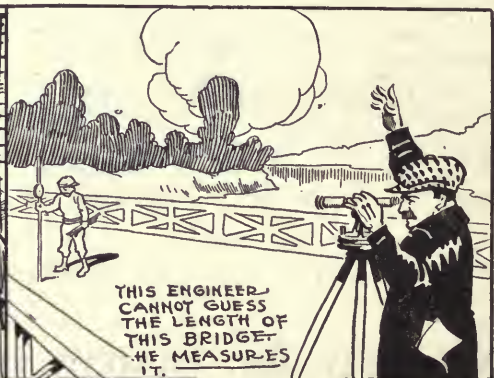
The uncertain factors which confuse ideas of value are:

The emergencies or whims which lead men to pay for a property more than it is worth or to sell for less.

Confusion between value and use. Land value is the measure of opportunity. Prosperity is the measure of what men make of their opportunity. Presumably an assessor values property, not men; yet it seems in-

stinct with them, when considering two properties of equal value, to assess the higher tax against the one that is put to the more profitable use. They are fining the owner for his enterprise.

However, the effect of scientific appraisal everywhere is to standardize sale values by creating a related standard for judgment concerning every parcel of property. Standardizing land values is not different from standardizing any other sort of values. The crucial thing is to fix a



unit for the common expression of opinion. If you ask a number of produce dealers to bid for 50 bushels of potatoes, their estimates based upon a certain value per bushel will be nearly identical. If you ask them to bid for a PILE of potatoes, their ideas of price will be confused by miscon-

ception of quantity and their bids may differ widely.

After all, the chief criticism of old-fashioned appraisal methods is this—it is the one fiscal process which has no unit of quantity, which therefore ignores units and jumps to totals.

CITY AND TOWN PLANNING

Some Impressions of City Planning in America

By Ewart G. Culpin

Secretary, The Garden Cities and Town Planning Association, London

AFTER nearly three months of continuous traveling, in which practically thirty thousand miles have been covered in the missionary task of explaining what has been done in Europe in the matter of city planning, and particularly how the garden city movement has progressed there, it is rather difficult at once to focus one's impressions. From coast to coast, from sunny California to the frozen north of Alberta, there has been the same cordial welcome, the same generous hospitality. Above all, there has been the same eager, grateful hearing of a message which we of the garden city believe to contain the germ of the solution of the ever-growing problem—the twin problem of civilization—the overcrowding of the towns and the depopulation of the countryside, with all the evils and inconveniences attendant upon haphazard growth.

The most encouraging impression I have received is the ready acceptance given to the presentation and emphasis of the sociological, the humanitarian, aspect. My audiences have consisted largely of business men, boards of trade and chambers of commerce having arranged a goodly proportion of the lectures, while civic organizations and university departments have also shown great interest. It was the business men, accustomed to gauging a proposal and weighing its possibilities, who seemed to

appreciate best what a city plan, generously conceived, would mean for their communities, and still more how the adaptation of the principles of the garden city movement and co-partnership in housing would bring new ideals of home life and a new standard of communal well-being.

City Planning in the Universities

Besides this, one fact must strongly impress an Englishman, and that is the intensity with which city planning is being studied at the universities, in Canada as well as in America. We have been familiar with the work done at Harvard for the past few years by Professor Pray, who is known to city planners all over Europe; but other universities have also begun to study the subject thoroughly. At Ann Arbor, Professor Tealdi, who has been for some time associated with Mr. Ossian C. Simmons, the President of the Society of Landscape Architects, has a large and growing department. I had the pleasure of speaking nearly a dozen times at Ann Arbor and of addressing several departments of the University. As an evidence of the interest taken, it may be mentioned that the department of landscape design has secured the full set of my Association's lantern slides, which may safely be put among the completest in the world. At Cornell, Professor Fleming is doing a lot of good work, and

Madison is showing much interest. At Columbia University, New York, a lectureship on city planning exists. At other places the architectural and landscape art classes are inquiring for information, and one has to regret that in England, to which country, perhaps, the world is to-day looking for inspiration on this vital subject, the older homes of learning completely ignore the subject, and only two of the others take up the subject in any degree. The more logical and democratic form of education in America will doubtless result in a generation of city planners, who, if the present trend is followed, will lead the world in scientific study, more particularly in that phase which finds its expression, not so much in the promotion of the civic center—although the necessity of a focus point for the city's activities will be recognized—but which leads to the provision of better conditions of life for the humblest of the citizens.

Interest in Co-operative Housing

In this respect there would appear to be a great awakening throughout America, and there is an evident desire to accomplish something for the improvement of existing conditions along the lines of co-operative housing which has had such remarkable success in England. It is difficult to compare housing work in the two countries, because of the greatly different cost of labor, etc., which makes prohibitive in America, at anything like the price, the charming "garden city" type of cottage which can be let in England on an economic basis at rents of a little over a dollar a week; but, inasmuch as the increase of wages means the ability to pay more for the house provided, there seems to be no reason why the same system should not be adopted successfully in America. And it is satisfactory to note that definite attempts are being made, as a result of this visit, to establish such societies in several places. It requires only a few successful experiments in this direction to start a revolution in housing methods similar to that in England.

The importance of the provision of open spaces and the acquisition of river frontages are receiving great attention generally, and citizens are awaking to the fact that the obsession of the last few generations for the accumulation of money has tended to the neglect of the preservation of real

wealth in the natural beauties of the neighborhood. A determined effort is now being made in many cities of the United States to secure natural advantages for the benefit of the inhabitants, and at several of the meetings committees were appointed to forward movements for the provision of a city plan which shall include these various proposals.

A Civic Center No Substitute for a Civic Spirit

It is being realized, I believe, that a civic center is no substitute for a civic spirit, and that a comprehensive view of the city as a whole, the city as an entity, must precede the satisfactory solution of the city's problems. The civic survey is a field of labor whose possibilities have been but faintly realized and whose importance is appreciated by but few people on both sides of the Atlantic, but the insight into the real underlying conditions of the masses of the population which this study will make possible will be one of the most convincing arguments for the effective handling of city problems.

The great feature of American cities which strikes the European visitor is the sense of sameness and the lack of individuality. With rectangular planning it is almost inevitable that this should be the result, and it can hardly be hoped on continuous street lines, where oftentimes the main feature is the double line of telephone posts, to be able as yet to create street pictures such as meet the eye at Rothenburg or are being recreated in the newer examples of English domestic architecture, notably at Hampstead Garden Suburb, where the influence of a controlling architect and the method of coöperative building have resulted under Mr. Raymond Unwin's supervision in street vistas which in their way have a charm akin to that of the medieval city.

All this is everywhere being realized, and the great need to-day seems not so much to know what requires to be done—although the awakening in that respect needs to be far more effective—but how to do it. It is very gratifying to me to realize how welcome is the message from England, and the hundreds of requests for printed matter dealing with it give one reason to hope that there will be careful study of the

newer aspects which I have been able to emphasize during this journey.

A Garden City Society Suggested

It is difficult for a stranger to estimate after so short a stay exactly what are the conditions to be dealt with, although the great kindness everywhere extended to me enabled me to see in a short time more than a year of study by myself would have revealed. I therefore hesitate to suggest remedies. The problems confronting the American city may not be those of England and the remedies of the one may not be the remedies of the others. There are sufficient points of contact, however, to make it worth while considering if the garden city or garden suburb movement, adapted to fit new world-problems, could not be

adopted in America. The improvement in physique, morality and mentality which it is proved follows the provision of proper housing with proper environment should be one of the strongest inducements to the application of the principle. The fact that it has spread from England into nearly every other European country is proof enough of its applicability. Germany,—where over a score of experiments are well on their way—Austria, France, Belgium, Holland, Scandinavia, Italy, Spain and Russia have each their own association engaged in the promotion of schemes, and from the welcome which the proposal has so far received it appears to me that a society on similar lines would receive cordial support in America. The question is, where and by whom shall it be started?

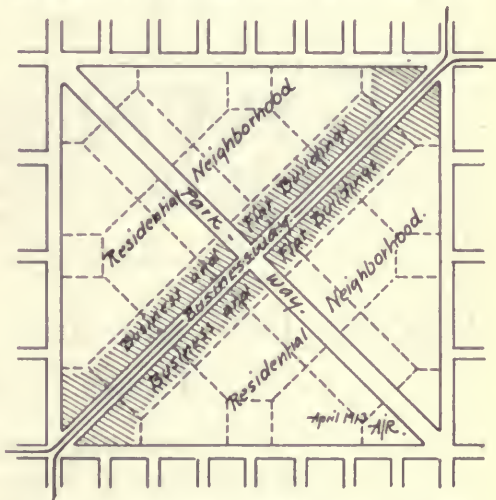
Taste and Knowledge in Town Planning

To the Editor of THE AMERICAN CITY:

The present primary stage of the town planning art is indicated by the Chicago City Club's competition for a quarter-section plan, whose result is given in the April number of THE AMERICAN CITY. The problem subject to competition was the finding of a method whereby the common gridiron system of our city lay-out could be improved. That means a subdivision system which, like a mesh in a net or a tile in a floor, could be fitted into the street net or pattern, and thereby improve this. The plans premiated are, however, not such atomic parts of a pattern, but individual independent villages with parks and building arrangements of local or exceptional nature. These plans are good and interesting as such, but useless and impossible for systematic improvement of a city plan, and run up against almost every rule and practice of our street department.

Chicago is a city of upwards of a thousand quarter-sections. She could add a couple of sections shaped after these premiated plans as curiosities, but no city can base its growth on such individually elaborated designs. We can not get rid of the gridiron system, for it is the historical base of our city plan; but we can improve on it; and the way to do this is to insert the

diagonals into every new subdivision and turn the traffic into them. One such diagonal pointing toward the city's center will be the business street and the other



PROPOSED DIAGONAL STREET LINES IN SUBDIVISION OF QUARTER-SECTION OF LAND

will, as an improvement of the circumferential lines, be used either for this secondary class of traffic or be made a parkway. This arrangement gives us four triangular units to arrange for residential purposes, the plans for which will be strongly in-

fluenced by local conditions. This seems to me a common-sense base for a solution of the subdivision problem. In filling in the triangles we will meet three problems attached to residence tracts, and they are:

1. Conservation of neighborhoods.
2. Fixed building lines independent of street lines.
3. Provision in regard to playgrounds for children and youths.

There is a public demand for a solution of these three problems which frequently is evidenced in the daily press and public meetings, and some general rules in this direction ought to be added to our building laws. The competitors for the City Club prizes, as well as the jury which awarded them, must have acted on the theory that town planning is a matter of taste only, for the pictorial effect is the governing one in the plans, and those that seemed most agreeable to the jury's taste were apparently picked for premiums.

The unavoidable result of this condition is that every draftsman handy with his pencil thinks it within his sphere to practice town planning, and that every author or journalist handy with the pen in treatment of social or artistic problems will write or

lecture on town planning. Though still a young art, its adepts are legion in both these lines and "experts" are met everywhere. Now this is not absolutely bad, for with the birth of the new art had to be proclaimed all over the market places the fact that cities are henceforth not merely to grow, but to be made. Yet it proves that we are in the primary stage of the evolution, the stage when the awakening is preached. Beyond that should, however, be another stage, the stage of formation of the basic knowledge and the maxims on which the artists are enabled to develop feasible plans and practical solutions of the universal city problems. Would it be too early to lift the curtain in front of this stage? Wouldn't it be better to realize the truth and get the problems placed right in the perspective? The great force working on the development of a social base for this fine art ought to see the goal, ought to know that town planning is more than a skin-grafting which heals up the surface and leaves the vexatious traffic problems to work out their own solution under the surface.

ALFRED J. ROEWADÉ, C. E.

Hollywood, Ill.



What a Few Women in New London, Iowa, Have Accomplished

By Mrs. Mary M. Pierson

President, Ladies' Improvement Association, New London, Iowa

IT would not be correct to speak of the civic work "of the women of New London," for many of them have not approved of women's taking part in such matters. Ours is a town of about 1,400, and only 24 women belong to our organization.

One spring morning I was called to the telephone by Mayor T. E. Rhoades, who

asked, "Will you act with two other ladies in town on the internal improvement committee of the City Council?" I replied, "Yes, if the Mayor and City Council wish it." "All right," said he. "I will appoint you, Mrs. C. E. Magers and Miss Anna Von Colen [assistant editor on our home paper] as members of the City Council Improve-

ment Committee." Thus was the ball set rolling.

We saw at once a great deal that was necessary to be done for the health and comfort of our little city. After counseling together, always consulting our Mayor, we called a meeting of the women of the town at the City Hall, and organized a women's improvement association. The subject of finance came up at once, and it was decided to make the membership fee 25 cents. Quite a number did not see what we needed money for, and declined to join us. However, about 48 paid in their quarters and began work.

During our first efforts some very laughable things happened, but with the coöperation of the Mayor we made progress. By his order a clean-up day was appointed, and on that day a tremendous amount of boxes, tin cans and trash rolled out of the town.

We then turned our attention to our little city park. We bought a \$10 lawn mower and set the City Marshal and his assistants to mowing the grass, and finally brought the park into respectable and attractive condition. The Council made us a donation of \$15.

Oh, how we worked! Finally, others, seeing that there was no stopping us, began to beautify their yards, and before long the town was a flower garden.

Then came the need for more money. Our band had gone to pieces, but wished to reorganize. There was a fine bandstand in the park, and we ordered it repainted. Then we gave an ice cream social, the proceeds of which served to get the band together again. We now have one of the best bands in the state, and the weekly band concert, from April to November, draws crowds of appreciative listeners.

As winter came on we saw the necessity of having money with which to purchase seats for the park; and as we live in the corn belt of Iowa, we decided to give a "Corn Carnival." This was the biggest undertaking of the kind ever carried through in our part of the state, and was attended by Governor Cummins, who seemed well pleased with our efforts. A substantial sum was realized, and we ordered a car load of iron seats. When these were placed on the short-cut green grass in the park, facing the bandstand, and were filled with people listening to the sweet music of our band, we felt that we had in-

deed accomplished something the first year.

Our company of workers has dwindled, but our influence is felt and respected, and when there is a question of bonding the town for schools, electric light, sewerage or water works, we not only go to the polls ourselves, but we see that the other women of the city go and that they have a right view of the matter under consideration.

Our electric plant burned down, and for a while there were so many objections to bonding again the already heavily burdened town that the loss of the plant seemed likely. The Mayor came and talked with me, and I called a meeting of the Association, which resulted in our starting out electioneering. Election day came, and New London got her lights. The City Council was strong in praise of the work done by the women.

The question of water works and sewerage is now before us. It was voted on recently, when 143 women cast their ballots. The water works question was carried, but the sewerage undertaking was lost by 23 votes, probably because there are but few modern homes in New London. The question will be voted on again in April, and the result will probably be different.

Last summer we were instrumental in organizing our first Chautauqua assembly. We pledged the sale of 300 tickets, and advanced \$25. We sold over \$700 worth of tickets, gave the people a fine week of instruction and social pleasure, advanced \$25 for another Chautauqua next July, and cleared \$200, which will buy more seats this spring.

We have had a great many things to discourage us, have been held up to ridicule, and have thought many times, "Does it pay?" But when a year ago our town was visited by an epidemic of typhoid fever and there were 60 nurses here where a professional nurse had never been; when so many homes were darkened by death, all because of the filthy condition of one drain that ran into an alley and poisoned a nearby well that supplied the water for our popular restaurant; then our physicians and men of better judgment (and women, too) realized the need of getting the help of the Improvement Association in cleansing and purifying our town. We are now considered an asset, and I believe we have come into our own.

Glimpses of City Lawns and Trees

The Beauties of Greensward and Shaded Thoroughfares



A BEAUTIFUL TREE-DECKED LAWN IN MONROE, MICH.



Courtesy of Peter Henderson & Co.

A STREET IN JERSEY CITY, N. J.



A STREET IN CLEVELAND WHERE THE LAWNS ARE PLANTED WITH ORIENTAL SYCAMORES AND A BROAD, PLAIN STRIP OF TURF BORDERS EACH SIDEWALK



Courtesy of City Parks Association, Philadelphia

STREET TREES IN GERMANTOWN



TYPES OF NEW YORK'S ORNAMENTAL LIGHTING STANDARDS

Street Lighting Systems and Fixtures in New York City*

By C. F. Lacombe

Chief Engineer, Department of Water Supply, Gas and Electricity

THIS city differs from others in that we have two systems of electric street lighting: one low tension, direct and alternating current multiple in the Borough of Manhattan and part of Brooklyn; whereas in all the other boroughs and in by far the larger part of Brooklyn the

* From a paper presented at a joint meeting of the Illuminating Engineering Society and the Municipal Art Society of New York, on February 12, 1913. The accompanying illustrations are from photographs loaned through the courtesy of the New York Edison Company.

street lighting, with a few minor exceptions, is by means of comparatively high-tension, direct and alternating series systems. Gas supply for mantle lighting is available throughout the greater city, except in a few remote sections. Naphtha mantle lamps are still used for frontier lighting where neither gas nor electricity is available. This system was formerly used in parks, but is now abandoned, for obvious reasons, in favor of the tungsten incan-

descent lamps. Of these various units in the greater city there are

| | |
|--|--------|
| Arc lamps..... | 19,180 |
| Incandescent lamps..... | 17,991 |
| Flaming lamps, permanent and on trial..... | 78 |
| Single mantle gas lamps..... | 44,653 |
| Inverted mantle gas lamps on trial..... | 28 |
| Naphtha vapor lamps..... | 1,816 |

A total of 83,746 lamps of all types. Expressed empirically and approximately, in terms of horizontal illumination, these lamps give an illumination equivalent to fifteen million candles, and are furnished by 28 lighting companies. For the purpose of street illumination, these lamps are used in the following manner:

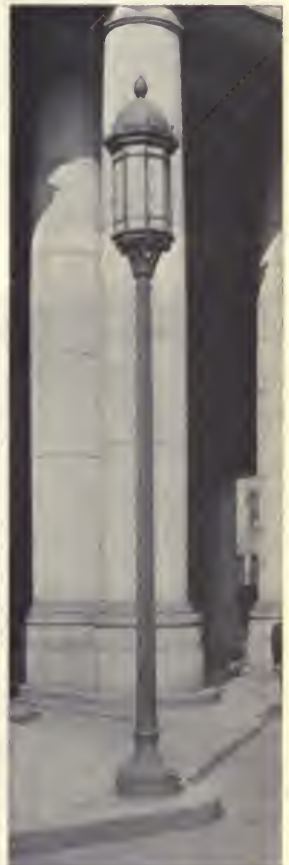
Arc lamps, reinforced by flaming arc lamps, at points of great congestion, as at Times Square, Manhattan.

Arc lamps on main avenues and business streets, practically over their whole length

in Manhattan, and as far as necessary in other boroughs, and then merged into tungsten incandescent, electric or gas mantle lamps.

Gas lamps are generally used in the residence districts and on unimportant streets little used at night; although of late, for many reasons, the tungsten lamp has made great inroads on this territory.

The problems of the engineer in the lighting of this great city are many and diversified. He must proportion the lighting to the needs of the various streets or sections and to their importance, due to greater or less use. He must lay out a system capable of great increase without expensive change of equipment, or the contracting companies will object. He must lay it out on economical and efficient lines and obtain judiciously fair prices within limits, or the city administration will object. He must try to eliminate glaring lighting, or the Illuminating Engineering



SOME OTHER STYLES OF LAMP STANDARDS IN NEW YORK



A WELL-LIGHTED DOUBLE CURVE IN CENTRAL PARK



THE NEW YORK PUBLIC LIBRARY AT NIGHT



THE LIGHTING OF SEVENTH AVENUE, NEW YORK

Society will protest; and he must make it agreeable and as artistic as possible, or the Municipal Art Society and Commission will criticise.

Agreeable and successful lighting is a combination of the efforts of all the different interests mentioned. It is not only a matter of artistic posts, but also artistic lighting, if I may use that term. To produce the best results, one must have the support of the city and the contracting company. The posts and the lighting must both be artistic and agreeable. The position, height and design of the supporting posts have much to do with the effect of the distribution of the lighting, as well as its cost.

Relation of Artist and Engineer

It is in these elements that the artist and engineer can well work together. Within limitations, the artist must not demand too extremely artistic design and lighting. It is too costly, except in a few isolated instances. In the general lighting of a great city, the useful side must have as great weight as the artistic. The engineer also should not cling too closely to the most efficient and economical devices which obtain only the greatest illumination at the lowest cost, for the lighting must be made agreeable to the eye.

In street lighting, unless surrounding buildings are to be specially illuminated, the useful rays are those that can be directed towards the ground. To make this agreeable, the point source of an arc lamp, for instance, must be made into a ball of softened light by diffusing globes or shades; and this, so far as is possible,

thrown towards the ground by either interior or exterior reflectors. This loses efficiency to a certain amount by the absorption of the light, and demands either closer spacing or more powerful sources of illumination at greater heights from the ground. It is, consequently, more expensive. So far, it has been used mainly in Manhattan, and there principally on its main avenues, for the reasons given.

In other locations, we approach nearer to the naked source of the light, which, in turn, means glare, and is not as agreeable, although very useful and less expensive. Considerable success in suburban sections of the city has also been attained by abandoning the intense arc unit and using three to four 60-70 candlepower tungsten lamps, and so obtaining better distribution, with less glare, and at about the same cost.

Artists should take advantage of the many possibilities of the new lighting devices, both in general and decorative illumination. Beautiful color schemes are possible with small colored lamps set in mosaic design, both



ARC-LIGHT POST ON RIVERSIDE DRIVE

massed and in outlines, on walls of buildings. As a substitute for advertising with glaring yellow flame lamps, the use of mosaic lighting would be vastly better and just as effective. Even general illumination, as given by the high-powered flame lamps, can be tinted agreeably in contradistinction to dead, cold, white light. In other words, artistic lighting is as possible as any other form of art.

Coöperation between artist and engineer should produce good, economical, artistic lighting.



The editors are glad to receive photographs and data for possible use in this department from municipal officials, water works superintendents, consulting engineers, manufacturers or others having interesting information on water supply subjects.

Some Features of the Emergency Sanitation Work in the Flooded District of Dayton

By C. F. Long
Consulting Chemical Engineer

THE unprecedented rainfall in three days, March 23-25, of 8.3 inches, which is approximately 33 per cent of the total average yearly rainfall for the state of Ohio, caused the most destructive flood in the history of the state. At the city of Dayton, the unfortunate center of the flooded district in the Great Miami valley, the water reached a level of 9.7 feet higher than any high water of previous record.

The writer was asked by the Ohio State Board of Health to accompany the first relief train that could be gotten away from Columbus. The train carried one company ambulance corps of the Ohio National Guard and equipment, two U. S. Army surgeons, two sanitary engineers, four physicians, representatives of the press and several attachés of the Governor's office.

Headquarters for the sanitary work in Dayton were established temporarily at military headquarters, at Brumberg Park. Passes were obtained from the Colonel in command good at all points through the established military lines, and a hasty inspection of conditions was started. Thorough inspection was impossible, due to lack of all means of transportation, the streets in many instances being almost impassable on foot, due to piled up debris and water.

The starting of the water works was considered of vital importance, since thousands were suffering from thirst or compelled to drink the flood water, while of even more importance was the great danger from fire with its attending loss of property and lives. Furthermore, no cleaning or washing of streets or houses could be attempted without water from the hydrants and taps.

The superintendent of water works fortunately lived outside of the flooded district, but was having difficulty in obtaining passes for a sufficient number of men to reach the pumping station in an effort to start the plant. Finally military passes were obtained for the superintendent and twenty men, and the station was reached Friday morning, March 28, at 10 o'clock. The entire outfit was in fearful shape. The boiler settings were thoroughly soaked and the entire inside of the pump room was covered with a layer of mud and slime from 6 to 10 inches deep, while the pump pits were clogged with debris consisting of drift wood, mud and the usual engine room fittings and supplies. The water had been approximately 15 feet deep in the building. Shovels were obtained and the work of cleaning began. Fires were started under two boilers in an effort to dry out the settings and bridge walls. A large force of men was gradually assembled and a fire engine obtained to pump the water from the boiler room and pump pits.

The plant is composed of one 15-million-gallon and two 10-million-gallon pumps. One of each size stands in a pit below the level of the street. The water supply is obtained from collecting units of an infiltration system, 20 feet below the bed of Mad River. Approximately 24 hours after entrance was gained to the door of the plant the upper 10-million-gallon pump was turned over and at about an hour later the other 10-million-gallon pump was started. The pressure in the mains went to about 30 pounds in the next half hour, and the whole of Dayton was again supplied with water. Many leaks and breaks in

mains and house connections made a higher pressure impossible at that time.

The plant was then without protection from Mad River, since from 1,500 to 2,000 feet of levee, from Findley Street west and directly north of the plant, were gone, and another rise of 4 or 5 feet in the river would have again flooded the plant. An engineer was at once detailed to begin repairs on the levee. The cleaning of the sewers was taken care of by another engineer. The sewer system was divided into districts and a man familiar with the system in his locality was detailed to make inspections and reports as to conditions. On Sunday morning, March 30, the sewer system was reported to be in fair condition and flowing by gravity in most cases. All flood gates had been opened and the downtown section was being drained. In some instances dust pans had dropped, stopping the flow. Sanitary sewers were for the most part intact.

Hand bills were printed and spread broadcast throughout the city, warning every one to boil all water used for drinking purposes, and giving general rules of sanitation to be observed. These rules and directions included temporary disposal of waste, such as garbage and excreta, care of food and of person during the time immediately subsequent to flooded conditions. Water was being hauled into the city from a number of sources during the early period immediately after the flood had receded, and an inspection of the sources of these supplies was made. They were found in all instances to be either distilled water from breweries outside of the flood zone or

from deep wells beyond the flooded area. This water was considered satisfactory and was not sterilized with hypochlorite of lime, although preparations had been made to undertake this. It was impossible to boil all supplies since there was entire lack of fuel other than wet drift wood.

The cleaning of streets, walks and houses was a herculean task, since everything was covered with a thick coating of mud and slime. The city was divided into sixteen districts, with an officer in charge in each district. This officer had authority to employ labor at \$2 per day, with instructions to employ a sufficient number to make the cleaning complete in his district, and if sufficient men were not at hand to report to headquarters, in which event men would be supplied. Cleaning was done by washing, scraping, brooming and shoveling. The military authorities obtained men by arresting all who appeared to be idle and assigning them to duties in the various districts.

Lime and disinfectants were spread generously over flood deposits, and orders were given to disinfect fecal matter in vaults and upon the surface when not easily and quickly removed. All dwellings in which it was shown that a contagious disease had existed were disinfected by formaldehyde.

The sanitary situation following a flood such as that which visited Dayton is for a time very acute, and thorough organization is absolutely necessary if immediate and lasting results are to be obtained. Time alone will show the results accomplished at Dayton; but up to the moment of writing there is no visible evidence of serious epidemic, and the situation is well in hand.

The Cumberland Water Supply

By F. Ernest Brackett

Consulting Engineer

CUMBERLAND is a city of about 25,000 inhabitants, situated in western Maryland, on the north branch of the Potomac River. It is a manufacturing city and a prominent distributing point.

The story of previous conditions in the water supply system of Cumberland is exceedingly interesting. It covers the period

from 1870, when a comprehensive system of water supply was installed with the then pure waters of the Potomac as its source, down to the present time, when Evitt's Creek has been chosen as a less polluted source. The original pumping system, installed by the Holly Manufacturing Company, is still in use.



EVITT'S CREEK, CUMBERLAND, MD.

In spite of the careful investigation and report of the Board of Water Commissioners in 1897, made necessary by the increasing pollution of the Potomac River, nothing was done until 1910, when the whole question was vigorously opened by an act

of the Maryland legislature, providing for an improvement in the water supply of Cumberland, and authorizing the issue of corporation bonds to meet the expense.

The plan recommended and finally adopted for the development of Evitt's Creek consisted in constructing a dam far enough up the stream to form an impounding or storage reservoir sufficiently high above the city to furnish a gravity supply. From the reservoir the water flows through the filtration plant to the city distributing reservoir, whence it goes to the city mains.

After a short and rather hotly contested campaign, the plan won the approval of the citizens at the election held for that purpose on May 16, 1911. The interesting part of this campaign is the fact that public opinion seemed at first to be opposed to the adoption of



THE EVITT'S CREEK DAM IN PROCESS OF CONSTRUCTION

the plan, mainly through ignorance or distrust of its main feature. This was recognized by a very considerable number of the citizens, who believed in the importance of a first-class water supply to the city. To combat the prevalent impressions these people formed the Merchants' and Manufacturers' Association, and through the press and a public bureau of information, as well as by solicitation, they finally turned the tide of opinion in the desired direction. The ladies' Civic Club was also effectively active to the same end.

Details of the Plan

In more detail the plan for the utilization of the Evitt's Creek water was as follows: The storage reservoir is formed by erecting a dam about 80 feet high in the middle, and about 450 feet long, across the valley at a point about 9 miles from the city. This dam is built of cyclopean concrete and faced with concrete blocks. The lake formed by this dam will cover about 250 acres and contain approximately 1,500,000,000 gallons. About 800,000,000 gallons of this will be used for city storage. The remaining water will be too low in elevation for ordinary use by the city, but will increase the efficiency of the reservoir as a sedimentation basin. The necessity of providing this additional depth will also avoid the necessity of draining the lake to the bottom.

The drainage area above this dam is 66 square miles. Unfortunately this shed contains a population of about 14 persons per square mile. The drainage area amounts to about $2\frac{1}{2}$ miles per 1,000 people. With moderate storage development a city in the eastern states can easily be supplied by a quarter of a square mile per 1,000 people. The size of the stream is therefore ample for all future needs.

From the lake the water passes to the purification plant, where it is first treated by adding coagulation and bleaching solutions. The coagulant consolidates the impurities and helps them to settle, besides making them more easily retained in the filters. The bleach improves the appearance of the water and destroys a certain amount of the microscopic life. After the impurities are allowed to settle as much as

possible, the water passes to the mechanical filters. Mechanical filters differ from the so-called sand filters principally in the rate at which the water passes through them, and in the means of cleaning by reversing the water through them. The high rate of flow permits a much smaller filter to be used than in the sand-filter plan, but makes the previous use of a coagulant nearly always imperative.

From the filters the water passes to the filtered water reservoir, thence by a 36-inch wood-stave pipe to the distributing reservoir about a mile from the city. The wood-stave pipe is preferred partly on account of its being cheaper than cast iron and partly because it lasts nearly or quite as well and, under some conditions, probably better than cast iron. The resistance to the flow of water is also less in the wood pipe, and this resistance does not increase by corrosion, as in the case of the iron pipe.

The capacity of the distributing reservoir is about 4,000,000 gallons. The original plan was for a 5,000,000 reservoir here. The whole plan as at present arranged provides for the delivery of 6,000,000 gallons of water per day. By increasing the size of the filter plant 12,000,000 gallons per day can be delivered. The city at present is using about 5,000,000 gallons per day. This is a high average for a city of this size, but the manufacturing establishments doubtless use much of this excess. The pressure of the city water will be somewhat increased under the new supply system, so as to cover some of the high points not sufficiently reached by the old supply.

The original estimate of cost for the system adopted was \$469,928, and the cost of operation \$18.50 per million gallons if 6,000,000 gallons per day were used, and \$11.90 per million gallons if 12,000,000 gallons per day were used. However, it is now estimated that the total cost will be about \$520,000. It is expected that the new system will be in operation in June of this year.

The credit of the legislative act inaugurating the improvement must be given principally to the late Robert H. Gordon. James P. Gaffney is the present City Engineer and James H. Fierres is the engineer in charge of the work.



Varied Uses of Motor Trucks by Municipalities, Contractors and Public Utility Corporations

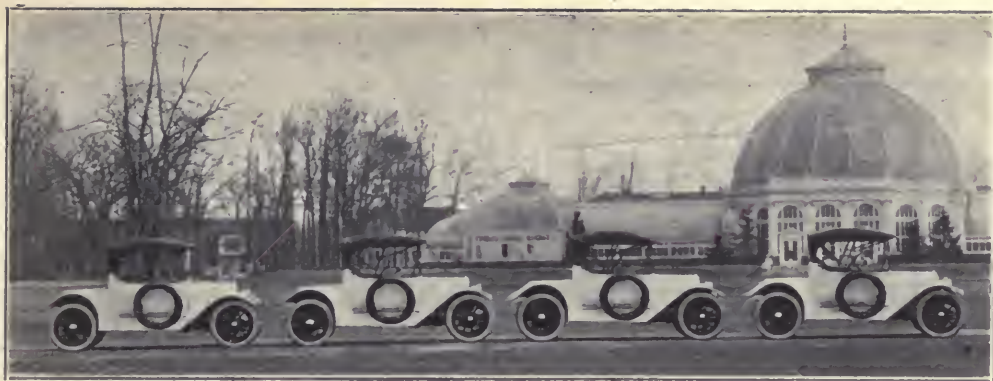
(A Series Begun in March, 1913, To Be Continued Through Several Issues)



ONE OF SEVEN ARMLEDER PATROL AND AMBULANCE MOTOR CARS SOLD TO THE CITY OF CINCINNATI



ETNYRE MOTOR TRUCK STREET SPRINKLER AND FLUSHING MACHINE, USED IN OREGON, ILL.



ABBOTT-DETROIT ROADSTERS USED BY ASSISTANT FIRE CHIEFS IN DENVER



CHASE MODEL D EXPRESS, WITH DIAMOND TIRES, OWNED BY THE CITY OF GRAND RAPIDS, MICH.



ELECTRIC AMBULANCE MADE BY THE COMMERCIAL TRUCK COMPANY OF AMERICA FOR A PHILADELPHIA HOSPITAL, EQUIPPED WITH FIRESTONE TIRES

ROADS & PAVEMENTS

Photographs and data are requested for possible use in this department, from municipal officials, city or county engineers, road superintendents, manufacturers or others having interesting information on subjects relating to roads and pavements.

Municipal Highway Organization*

By William H. Connell

Chief, Bureau of Highways and Street Cleaning, Philadelphia, Pa.

ONE of the principal points that should not be lost sight of in connection with the reorganization of a municipal highway bureau is that the first steps should be to plan the existing organization to cope with the existing conditions to the best possible advantage. This is necessary on account of the physical work that cannot be sidetracked while the organization work is going on. The work should be kept up-to-date, even if the organization controlling it is not laid out in accordance with the principles of scientific management.

After a thorough study has been made of the physical conditions and the character and volume of work coming under the jurisdiction of the Bureau, plan and put into operation an organization designed to control in an efficient and economic manner the different functions and their subdivisions. The primary object should be to centralize the control of the work. It is not essential that maintenance and construction work should be separated; local conditions should govern this phase of the situation. Ease of operation should be a governing factor, and the organization should be planned to do the greatest amount of work with a minimum of friction.

Up-to-date cost records should be installed, the control of the correspondence systematized, and the employees trained to coöperate with one another and work as a unit. The public should be shown every

consideration, as we will never attain the highest point of efficiency unless we have the confidence of the community. One of the most important things in connection with the work coming under the jurisdiction of the Bureau of Highways and Street Cleaning is an educational campaign. If we write to or tell a citizen we cannot grant his request, without any further explanation, he becomes an enemy of the Bureau. If we give him our reasons and explain the situation, he may be disappointed, but is usually satisfied. Engineers are too apt to be short in their replies and impatient when they receive unreasonable requests, forgetting all the time that, if they had not gone through the experience they have, they would be just as unreasonable in their requests as the average citizen. One of the difficult problems in organization work consists in obtaining clear and concise reports and full explanations in connection with the correspondence of the Bureau.

The necessary steps should be taken to revise the ordinances and legislation limiting the control of the work and inconsistent with the principles of good management and centralization of control of the work of the Bureau. Legislative and aldermanic interference has been eliminated to a great extent in New York, but this is not so with most of our municipalities.

Principles of Organization

No matter how large or how small the municipality may be, the underlying principles constituting the foundation of the highway organization are the same. Select an engineer whose experience has been

* Abstract of a lecture given in the Advanced Course in Highway Engineering at Columbia University in March, 1913.

gained in highway organization work; tell him about how much money he will have to spend, give him an idea of the mileage and area of streets and the scope of the work coming under his jurisdiction, and he will build up a successful organization, provided he follows the same principles the architect must to design a substantial house, namely, select the materials best suited to support the structure. The highway organization, to be substantial, must be composed of men capable of upholding and controlling the respective divisions of the organization coming under their control. If this procedure is followed, the organization will be permanent and will stand, unless seriously interfered with, even in the absence of the engineer who built up the organization member by member. But if it is to be kept up-to-date, it will require changes and improvements commensurate with the demands of the time and with increased population.

It is not a difficult task to start right, but right here municipalities only too often have failed. The lawyers and business men placed at the head of the public works departments have not followed the procedure they would in building a house or doing something else that would require a like amount of intelligence in the selection of the tools to work with. They have either attempted to build up the organization themselves, or have selected engineers whose principal qualifications have been that they were specialists in reinforced concrete, water works, sewer works, etc., or, in short, anything but highways. And what has been the consequence? These men spend three or four years or more groping in the dark, studying the rudiments of the requirements of a highway organization, and by the time they are just beginning to find themselves, and appreciate that highway engineering is a special branch of the engineering profession, the public has become impatient, and justly so. Such control of the highway situation retards the advance of modern highway organization and engineering just as much as the old time political administration of the Highway Bureau, and the reason is that the public expects something from the well-intentioned administration and doesn't get it, while in the latter instance they did not expect much and usually were not disappointed.

Center Control in the Highway Bureau

It may appear rather odd to some, but nevertheless it is a fact, that very few, if any, highway organizations control the streets coming under their jurisdiction. The control is usually divided up between the street railways, telephone, telegraph, electric light, gas and other corporations. If, when these companies tear up the streets, they are permitted to make their own repairs, there results a confusion which takes away from the Highway Bureau the direct control of street repairs. Such arrangements as are necessary should be made to place all repair work directly under the Highway Bureau. If the repair work is done by contract, the contract should be with the city. The Highway Bureau should have sole authority to repair or order repairs, of whatever nature, that are to be made. This would give the Bureau a direct control over the contractors, and place the responsibility on the Bureau for the condition of the streets, and do away with the excuses we so often hear from city officials, that "the railway or telephone company is responsible for such and such repairs, and we are doing our best to push along the work." The parkways and main park driveways should also be under the control of the Highway Bureau, as there should be but one system of highway construction and maintenance in the municipality.

The principle of centralization of control is the governing factor in a municipal highway organization, as it is also in any other organization of whatever nature. This can only be accomplished in a highway organization by first assuming such control of the streets that the responsibility for all conditions that may arise will be placed unqualifiedly with the Highway Bureau. Second, the subdivisions should be so organized that they will all be in close touch with the central office and working as a unit; there must be no overlapping of jurisdiction, and the policy emanating from the main office as to methods of carrying on the work should permeate the whole organization. Each factor in the organization, from the common laborer up, should be schooled in a sense of his responsibility and know where it begins and ends.

Another very important step toward the control of street repairs is the establishing of municipal repair forces. The city should

not be forced to depend upon contracts for work of this character, and, indeed, the only way to control completely wear-and-tear repairs, as well as cuts, is through municipal forces. Such repair forces naturally fall into four divisions—asphalt, stone block, wood block and brick, and macadam. In a few cities some success has been obtained with city gangs in repairing wood block and asphalt block streets, but the big problem does not include either of these. Properly organized, a municipal asphalt plant is a step toward centralization of control over pavements, provided the area of asphalt pavements warrants a plant for repair work. No less important, however, are the repair gangs for the granite, brick and macadam pavements.

It is only within the last few years that the engineer has been finding out that city labor, properly handled, is far superior to that obtained through contracts. Ease in administration requires a municipal force for repair work, as mobility cannot be obtained through any other than city forces. In addition to this fact, it might be well to add that results obtained recently in various cities show a substantial saving by reason of the abandonment of contracts for repair work, and the substitution of city labor. In any event, even though the organization is not equipped to handle the work, all contracts for repairs to cuts should be made directly with the city and not with the public service corporations.

After planning and working out a highway organization adequate for the requirements of the municipality, the first and most important step toward efficiency and economy in carrying out the work is the establishment of unit cost records, covering all classes of work carried on under the Bureau. The basic principle of these records is simply to bring out by comparison the weak and strong points of the organization, which will act as a guide in planning and conducting the work in an efficient and economical manner. Comparisons of different subdivisions of one function of the organization may be made one with the other, or comparisons of like functions in different organizations, all of which tend to improve the methods of carrying on the work, impress the men with their responsibility and at the same time arouse the sense of pride they should have in their work. All maintenance work

should be initiated through job orders issued from the main office, with the exception of emergency repairs, which work should be controlled through a job order issued by the superintendent or engineer in charge, a carbon copy of which should be transmitted to the main office. The foreman should be supplied with a force account and daily report sheets, through which labor hours, foreman's time, team time, and material used could be charged under their respective job-order numbers and each day transmitted to the main office, where the unit cost records would be compiled.

Organization of a Highway Bureau

The accompanying chart illustrates a proposed organization of a Bureau of Highways which embraces construction and maintenance of highways, street cleaning, collection of garbage, maintenance of bridges and maintenance of sewers in a municipality with a population of about 1,600,000 and 1,500 miles of streets and roads to care for, of which 1,000 miles are paved with first-class pavements, 300 miles with water-bound and bituminous macadam and 200 miles are dirt roads. It is assumed, of course, that all street repair work and bridge and sewer maintenance, as far as is practicable, will be done by municipal labor, and all original construction and repaving by contract.

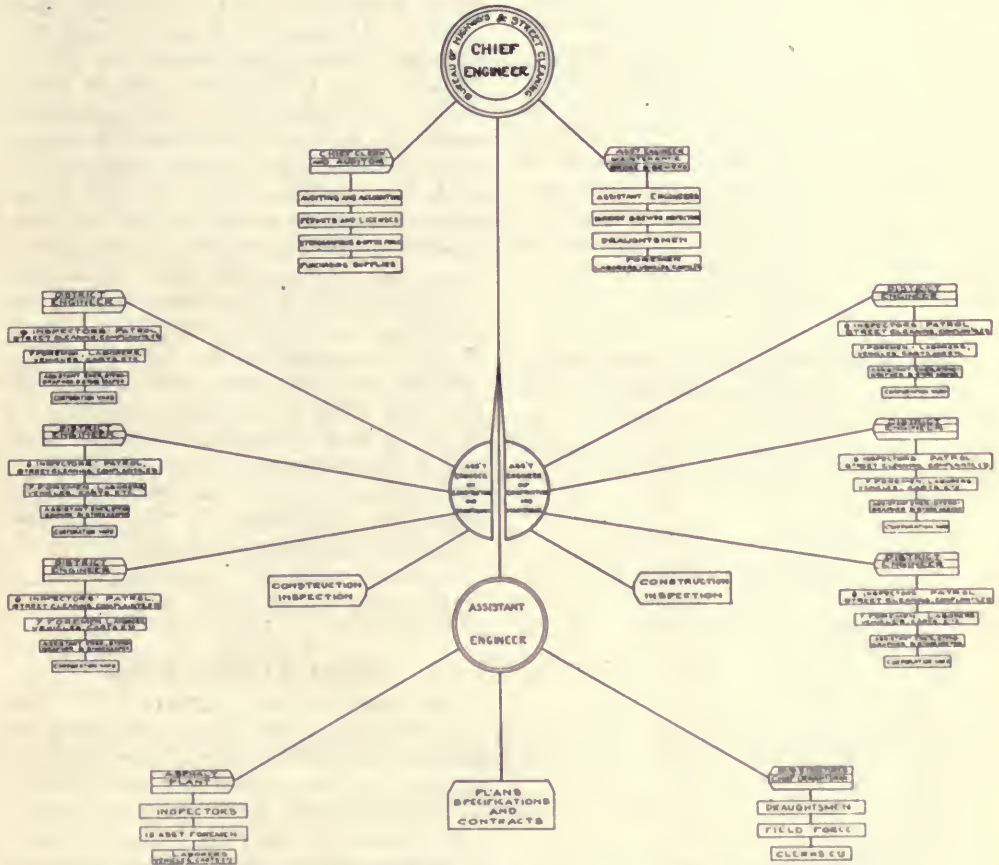
The organization, it will be observed, is divided into five main divisions, which in turn are subdivided in accordance with the requirements of the functions of the respective divisions. A chief clerk is in charge of the clerical force, which embraces auditing and accounting, permits and license division, stenographers and clerks, purchasing supplies, etc. The maintenance of bridges and sewers is under the direction of an Assistant Engineer, and is subdivided into two divisions, maintenance of bridges and maintenance of sewers. All minor repairs to bridges and sewers are made by municipal labor, more extensive repairs by contract. Sewer cleaning of course is done by municipal labor.

The supervision of all regulating and grading of streets, construction and maintenance of pavements and street cleaning is divided into two main divisions, each under the direction of an assistant engineer. Both of these divisions are subdivided into

three districts, each under the direction of a District Engineer. Each district has nine patrol inspectors, whose duty it is to report and measure all defects in pavements, plumber's cuts, corporation cuts, and to report encumbrances; to answer complaints, etc., and supervise the street cleaning and collection of garbage, which has been assumed to be under contract in the organization under discussion. It is strongly recom-

the total number is approximately correct for the municipality at large.

Construction inspectors are assigned to each district as occasion requires, by the Assistant Engineers of construction and maintenance. The other main division comprises the office force in charge of plans, specifications and contracts, the asphalt plant, and the division of subsurface structures, and is under the direction of an



ORGANIZATION CHART OF BUREAU OF HIGHWAYS AND STREET CLEANING

mended, however, that this work be performed by the municipality itself, as it is the only logical way to properly control it. It will also be observed that each District Engineer has under his jurisdiction seven foremen, laborers, vehicles, carts, etc., assistant engineer, stenographer, storekeeper and corporation yard.

The number of patrol inspectors, assistant engineers, foremen, laborers, etc., may vary somewhat, depending upon the requirements of the respective districts, but

Assistant Engineer. The division of subsurface structures is a most important division, and the rules and regulations governing the placing of subsurface structures in the street, after a pavement has been laid, cannot be too strict. This is one of the most serious problems confronting the municipal engineer, and indications point to its not being under proper control in any municipality in this country. The only real solution of the problem would seem to be underground pipe galleries. The evil, how-

ever, can be minimized by exercising a more thorough control over the corporations by insisting on a strict compliance with rules and regulations designed to permit of as little disturbance as possible to pavements after being laid.

A testing laboratory has not been mentioned, as it is assumed that the municipality would have a laboratory equipped to handle the work of all the city departments.

The primary considerations in making up the accompanying chart were to illustrate a practical scheme for carrying on the work of an organization, such as referred to in this paper, by subdividing the responsibility of the work in such a manner that the Chief Engineer will not be swamped with detail, but at the same time will be in such close touch with all the work under his jurisdiction that he can intelligently direct and thoroughly control the operations of the Bureau.

Paving Brick Specifications

A leading paving brick manufacturer has gathered the following list showing the maximum abrasion loss allowed on paving brick in the specifications of the cities mentioned:

| | |
|-----------------------|-------------|
| Baltimore | 20% and 22% |
| Chicago | 21% |
| Grand Rapids..... | 22% |
| Indianapolis | 21% |
| Trenton, N. J..... | 20% |
| Canton, Ohio..... | 21% |
| Fremont, Ohio..... | 22% |
| Fostoria, Ohio..... | 22% |
| Akron, Ohio..... | 22% |
| Columbus, Ohio..... | 21% |
| Toledo, Ohio..... | 22% |
| Newark, N. J..... | 22% |
| Philadelphia, Pa..... | 22% |
| Sandusky, Ohio..... | 21% |
| Sydney, Ohio..... | 22% |
| Bryan, Ohio..... | 22% |

These figures apply to tests made with the new standard paving brick rattler with spheres, as adopted by the American Society of Municipal Improvements and approved by the National Paving Brick Manufacturers' Association after quite a thorough investigation. The maximum loss of weight from abrasion allowed in the A. S. M. I. standard specifications is 22 per cent.

Financing Road Improvements

To the Editor of THE AMERICAN CITY:

I have been interested in reading in your February number the communications from Messrs. E. B. Gaston, Nelson P. Lewis and Geo. C. Warren with regard to the question "How should road improvements in country districts be financed."

With regard to the construction of permanent highways through the rural districts, those constructed of concrete, brick or other like materials, it seems to me that while the abutting land should pay its due proportion for building this class of roads, the amount thus taxed to abutting property should be land on either side of such a highway for at least one mile distant. Certainly the land and farmers within a distance of one mile or less are both greatly benefited by this main trunk line highway; hence the abutting land owner should be helped to finance the permanent road by the adjoining land which will be benefited. There is no denial of the fact that rural districts and farm values are vastly benefited as a result of improved highways. It therefore seems reasonable that the land owner should pay his or her proportion of the expense, as nearly as possible as the benefit is distributed in the localities touched by highway betterment.

ROBT. N. CARSON.

Iowa City, Ia., March 6, 1913.

♦ ♦

Street Traffic Rules

The rules for the regulation of street traffic in Jersey City, N. J., authorized on January 1 by the Board of Police Commissioners, have been issued in a handy booklet of 16 pages, with the compliments of the City Betterment Interests. The directions to owners and drivers of vehicles, animals, automobiles and street cars are clear and definite. Those in regard to turning into another street and crossing from one side of a street to the other are illustrated by diagrams showing how, and how not, to do it. Official copies of the Jersey City street traffic regulations can be obtained from the City Betterment Interests, 46 Montgomery Street, Jersey City, N. J.





Monthly and Yearly Fire Losses

The records of the *New York Journal of Commerce* show a total loss by fire in the United States and Canada during March of \$17,511,000. Each of 307 fires during the month caused an estimated loss of not less than \$10,000. Thirteen fires caused in each case a loss of at least \$200,000. Thus far the fire waste of 1912 is less than that of 1913 for the same months. The fire loss at Dayton, Ohio, was \$500,000.

| MONTHLY LOSSES | | | | YEARLY LOSSES | |
|----------------|---------------|---------------|--------------|---------------|---------------|
| | 1911 | 1912 | 1913 | 1912.... | \$225,320,900 |
| January | \$21,922,450 | \$35,653,150 | \$20,193,250 | 1911.... | 234,337,250 |
| February ... | 16,415,000 | 28,601,650 | 22,084,600 | 1910.... | 234,470,600 |
| March | 31,569,800 | 16,650,850 | 17,511,000 | 1909.... | 203,649,200 |
| April | 17,670,550 | 16,349,400 | ..... | 1908.... | 238,562,250 |
| May | 21,422,000 | 21,013,950 | ..... | 1907.... | 215,671,250 |
| June | 20,691,950 | 16,103,450 | ..... | 1906.... | 459,710,000 |
| July | 25,301,150 | 15,219,100 | ..... | 1905.... | 175,193,800 |
| August | 12,662,650 | 14,158,800 | ..... | 1904.... | 252,554,050 |
| September .. | 11,333,250 | 13,779,300 | ..... | 1903.... | 156,195,700 |
| October | 13,945,000 | 13,651,650 | ..... | 1902.... | 149,260,850 |
| November ... | 18,680,600 | 16,172,300 | ..... | 1901.... | 164,347,450 |
| December ... | 22,722,850 | 17,967,000 | ..... | 1900.... | 163,362,250 |
| T'l for y'r. | \$234,337,250 | \$225,320,900 | ..... | 1899.... | 136,773,200 |
| | | | | 1898.... | 119,650,500 |

Are Our School Buildings Fire-Traps?

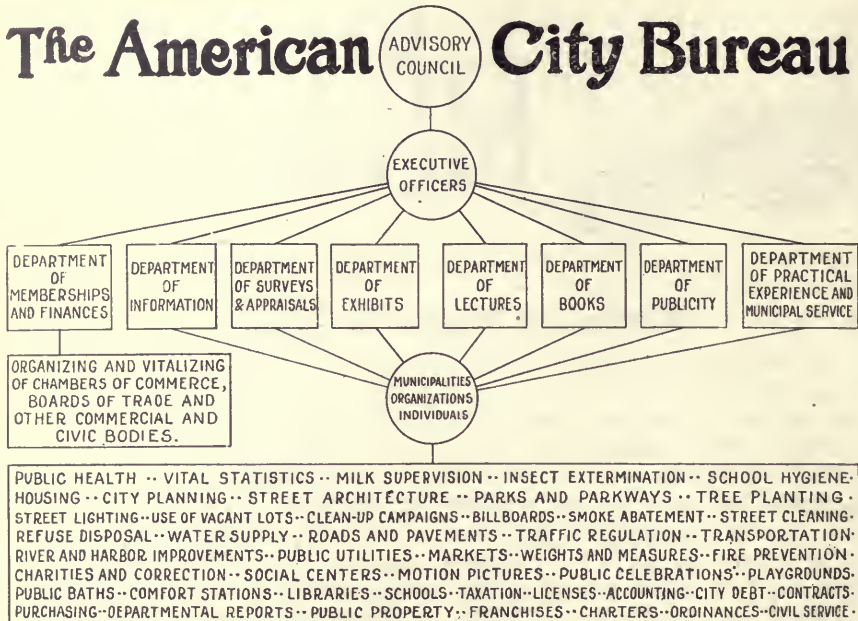
By George Ethelbert Walsh

THE campaign against the enormous fire waste of the United States has naturally led to a study in towns and cities of conditions that are classified as "preventable." Carelessness is one of the most prolific causes of fire, and the dissemination of information regarding the best methods of avoiding fires is of the utmost importance. School children can be trained to observe habits of carefulness in handling matches and combustible articles much more easily than adults, just as they are more amenable to fire drills than men and women in factories. Fire drills in public schools are far more perfect and automatic than in

most of our manufacturing plants, and fires in school buildings have been attended with far less loss of life per capita.

This is not because schools do not burn down like other buildings. Statistics show that the average number of buildings destroyed by fire each week in the year in this country are classified as follows: 140 flat houses or tenements, 26 hotels, 12 churches, 10 schools, 3 theaters, 3 public halls, 3 department stores and 2 each of colleges, hospitals and jails, and some 1,600 homes of various kinds. Schools and colleges stand rather high on the list as fire hazards, and their destruction is one of the unpleasant

The American City Bureau



The American City Bureau

**A CLEARING HOUSE for INFORMATION
CONCERNING MUNICIPAL IMPROVE-
MENTS and COMMUNITY ADVANCE**

THE AMERICAN CITY enables officials and taxpayers of one city to *learn* what other municipalities are attempting and the means by which the most desirable results are accomplished.

THE AMERICAN CITY BUREAU helps officials and taxpayers of one city to *accomplish* what other municipalities are attempting.

RESULTS ARE ACHIEVED

- 1—Through placing commercial and civic organizations upon a firm financial basis.
- 2—Through studying the efficiency of city departments and making surveys of social conditions.
- 3—Through supplying photographs, charts and diagrams for civic exhibits.
- 4—Through furnishing lecturers and lantern slides for public meetings.
- 5—Through handling the sale of books and pamphlets on matters relating to applied municipal economics.
- 6—Through the preparation of publicity and the criticism of advertising plans.

Write for Pamphlet No. 1

THE AMERICAN CITY BUREAU

93 Nassau Street - - - - New York

features of our criminal waste of property and lives by fire—a waste that exceeds that of nearly all other countries.

According to the statistics of the Bureau of Education at Washington, we spend annually about \$70,000,000 in the erection of public school buildings. The per capita cost for public school education in the United States rose from \$33.78 in 1900 to \$48.92 in 1910, and the cost is constantly on the increase. It is estimated that over three-quarters of this increase is due to the cost of the school buildings.

The Fire Hazard of Schools

If ten schools, including private and endowed, as well as public schools, burn down every week on an average, or 520 a year, the waste of school funds through fire for the whole country must be enormous. We estimate our annual fire loss, in ordinary years when we have no great conflagrations, at \$300,000,000. What percentage of this enormous loss is represented in the destruction of schools is not an easy matter to say, but it is sufficient to cause no little anxiety.

The fire hazard of schools is not considered so much from the point of money loss as from that of the more humanitarian view of human sacrifice. The tragedy of a fire is enhanced a thousandfold when we know that our little ones are cooped up in it, and if the structure is of cheap, flimsy, inflammable material all the fire drills in the world will not relieve us of anxiety until the last pupil is out of the burning building. The tragedy of a fire-trap is always a blow to our fancied sense of security, but when the holocaust is made up chiefly of children our mind revolts at the thought. It is intolerable that we should put up dangerous school buildings and force those of tender, unreasoning years to spend their hours of study in them to become the prey of man's greatest enemy.

Approximately 17,500,000 children spend the greater part of their days in the public schools. If the buildings are not entirely or nearly fireproof, this great army of children have no protection from being roasted alive other than that of well-executed fire drills. The fear of a panic in a school of several thousand children is always present with the teachers, and they perhaps never respond to the fire gong without a certain amount of trepidation. The responsibility

placed on the teachers at such moments can hardly be realized by an outsider. Even under the best conditions, with broad fireproof stairways and wide doorways, the responsibility is tremendous.

More than one teacher can tell of instances when the fire drill would have failed had the fire been a big one and the building of an inflammable nature. A big, unruly boy might be sufficient to break the drill and cause a small panic among the little ones. This is particularly true among foreign-speaking children of our congested city schools.

"I can never get accustomed to the fire-drill gong," said one teacher in speaking of the subject. "I never know whether it's for a real fire or simply a quick dismissal. We have never had a fire in our school, but if it comes some day, and the fire drill fails, no one can say what the results may be. For our school is not by any means fireproof, and it may go up in a quick blaze."

A short time ago the announcement was made in the papers that a good many of the public schools in New York were anything but fireproof. They are old buildings, constructed in the days before modern methods of fireproofing were employed, and improvements and modifications of them have not eliminated the fire hazard. They may have been made sanitary and comfortable, but they are not fireproof. Whether they are fire-traps is a question that rests heavily upon the shoulders of those responsible for their maintenance.

Conditions in New York City

New York's first fireproof school building was constructed in 1867, but little advance was made in this direction until the present school building superintendent took office in 1891. That is too short a time to eliminate entirely the old fire-trap schools and replace them with modern fireproof structures. But the improvement has been noteworthy in recent years; and as New York leads all other cities in the number and character of its fireproof commercial buildings, so she heads the list with her number of fireproof public schools.

In 1894 the building law was changed so that all public schools over 35 feet in height should be constructed of fireproof material. Since then the elimination of those of non-fireproof construction has been going on steadily, and to-day we have



Scientific Street Lighting

PUTTING a big light on the corner and leaving the middle of the block in darkness is the antiquated method of trying to light a street. It gives too much light in some places and not enough in others. It is inefficient in both cost and results.

Proper street lighting requires a continuous line of light—a succession of small units so placed as to cover the entire street area, without loss of light toward the sky or in the open air.

National Mazda lamps are ideal for this purpose. Made in all sizes, they may be used singly or in clusters. They give three times as much light as carbon lamps at the same cost for electricity. They require no trimming and no attention. Their light is white and pleasant—very much like daylight. They are very rugged. They burn in any position.

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THE QUALITY LAMP

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Our Street Lighting Service Department is exclusively devoted to the problems of better and more economical street illumination, and will furnish complete data, plans, estimates and recommendations without obligation or expense of any kind. For information address:



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Diagram of street with large units. Note lack of proper distribution. Wasteful and inconvenient.

Diagram of street with National Mazda lamps. Costs less to light and gives proper distribution without waste.

the following showing of school buildings in New York City: Fireproof, 186; partly fireproof, 62; non-fireproof, 253. Under the present administration and enlightened policy it is fair to assume that the entire elimination of the non-fireproof public school building in New York will eventually take place. No new buildings other than the fireproof are being put up in New York for school purposes. The old ones would undoubtedly be abandoned entirely or rebuilt if the congested condition of the districts in which they are located did not make this course unwise. We cannot, however, feel entirely safe regarding our school children until the wrong methods of building our schools have been entirely rectified. Our inheritance of these structures is one of the evils that have come down to us that must be removed as quickly as possible.

The present fire prevention movement will help forward the school cause. In the early construction of public schools the question of economy was paramount; but to-day sanitation, fire protection and healthfulness demand precedence. School designing is one of the most difficult problems that architects have to face. There are so many features to consider, such as the size and shape of the land, the demand for architectural beauty, the need of ample light and ventilation, and the limited amount of money appropriated for each building, that designing public schools requires the best of architectural talent in nearly every town and city. The more general standardization of public school buildings throughout the country is a matter of the greatest importance, and a better knowledge of the achievements made in some cities would help greatly to eliminate the evils in other places. The Bureau of Education at Washington has taken up a study of the problem of the school building, and we may expect in a few years to receive more reliable information and data as a guide.

Abolishing the Fire-Trap Schoolhouse

The old wooden schoolhouse is still with us in great numbers. The frightful holocaust at Collinwood, Ohio, a few years ago, when children were roasted alive by the score, had one good effect. It attracted attention to the danger of imprisoning school

children in buildings that might in an emergency cause their death. Local school boards stirred themselves to remedy the most glaring of evils. But it did not bring the era of fireproof schools. It did not even result in a complete change from wood to brick within the city fire limits in all towns and cities. Thousands of wooden schools have been erected since this disaster within the fire limits of towns and cities.

But the movement to abolish fire-trap school buildings has gained headway in many parts of the country, and there is every indication that by constant agitation they will eventually be entirely eliminated. The fire-trap school house is the crowning disgrace of our boasted civilization. There is no other conceivable evil that approaches it in importance.

St. Louis, like New York, has made great strides in reforming the character of its school structures. In 1897 the city amended its building laws, and in 1898 its first fireproof school building was erected. Up to that time the schools of St. Louis had been a disgrace to the city. An investigation showed that many of them were fire-traps. The St. Louis Fire Prevention Bureau discovered that many of the schools had no safe exit in case of fire. Even though fire drills were practiced regularly, there would have been little hope for the children if a great fire got under headway. It was impossible to tear down all the old fire-trap schools at once to make way for new ones, but about a million and a half dollars were expended in remodeling and improving the most dangerous buildings.

One of the worst features of many of the old school buildings from the point of view of the fire hazard was the location of the furnace and boiler room under the main structure with no attempt at fireproofing. Most fires in schools and public buildings start in the basement, and by fireproofing the boiler room an important step in advance is made. St. Louis, after remedying the defective school buildings, immediately applied itself to the work of building up new modern, fireproof structures. To-day she has nearly fifty fireproof public schools, nearly one-half of the city's total, excluding temporary and portable affairs. Each year some of the old flimsy school buildings are torn down and replaced with new fireproof structures, and as fast as funds become available St. Louis applies herself to the



Alba Installation: Lincoln Park Boulevard, South from Burton Place, Chicago. Night View.

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It gives the best light as well as the best looking, and so

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And it frequently costs less than antiquated, ugly, inefficient lighting—
never costs as much in proportion to what it does.

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(Some so-called "Opalescent" globes give the light a reddish tinge.)
3. Alba is handsome by day as well as by night.
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transformation of her school building problem.

Chicago has followed in the steps of New York and St. Louis in trying to eliminate the fire-trap school. She has gone even further than the other two cities in some respects, increasing the stair capacity of all the new schools some 50 per cent and separating them so that the children from one floor do not come in contact with those from another. Doors and exits have been doubled in number, and roofs, floors and walls are all of fireproof material of the most improved type.

Chicago has thus evolved its own particular type of school, and with but slight modifications all new ones have to adhere pretty closely to the standard arrangement of construction. This does not mean that the architect is handicapped in his artistic treatment of each separate school building according to its location and surroundings, but simply that he is not allowed to sacrifice stairways, exits, doors, roofs and windows to any external effect of beauty. Such a system assures the city of the very best type of fireproof and sanitary building at a minimum expense.

Philadelphia started in the movement to protect her children from fire later than any of the above three cities, but she is making good in her effort to catch up. In the past few years she has spent millions of dollars in constructing fireproof schools and in improving the old ones so they will afford fair protection against a holocaust.

Boston, on the other hand, started fireproofing as early as 1896, and then instead of keeping pace with some of the other big cities she compromised by falling back on the state law. Massachusetts has a law which requires what is popularly called slow-combustion construction. This was first developed for mill construction in that state, and its application to the schools was an excellent thing so far as it applied to the whole state. But it was hardly intended for a city like Boston. The city did not go beyond the state law; and while Boston has some forty schools fireproofed, wholly or in part, in the central part of the city, there are many others within the city limits built with wooden floors and wooden roofs.

State laws regarding fire protection for public schools are very lax and inadequate. Indeed, there are not more than half a

dozen which have any regulation whatever, leaving the matter and method of construction entirely to the local authorities. Ohio and Connecticut, as well as Massachusetts, were among the first to pass state laws regulating school construction. It is from the cities that we must expect relief. Perhaps this is the best policy, for each city can deal with its fire problem more adequately than state legislatures. And it is in the cities that the school fire-trap is the greatest menace.

San Francisco, also, has practically declared for the slow-combustion type of public school instead of the fireproof affair. Los Angeles, after building several of the finest types of fireproof schools in the country, appears to have abandoned this high standard, and is now following Boston and San Francisco in the slow-combustion policy. Contrasted with these we have such smaller cities as Elmira, Oswego, Cortland, Wellsville, East Rochester and Falconer, in New York, building types of fireproof schools that, for their size, are not surpassed by any in our large cities. Oklahoma City built its first fireproof building in 1909, and now the Board of Education has come out flatly for completely fireproofed schools hereafter.

While the few leading cities have definitely declared for the fireproof schools, and some of the others are committed to the slow-combustion policy, the thousand-and-one small towns and cities scattered throughout the country are still indifferent to the problem or merely temporizing with it. Some compromise with brick walls and wooden floors and roofs. Others cling entirely to the wooden or frame structure, satisfying themselves by increasing the number of exits and widening doorways and windows.

Awakening to Responsibility

The days of the little wooden schoolhouse in the country may not be numbered, but the wooden schoolhouse in towns and cities with their congested population is out-of-date. It should pass away with other of the evils which we have so long tolerated. State laws regulating the construction of schools in first, second and third class cities may be necessary to bring some towns in line with the general movement; but there are indications that local

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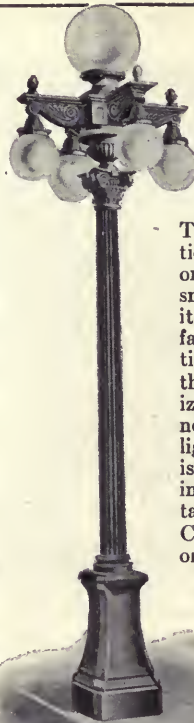
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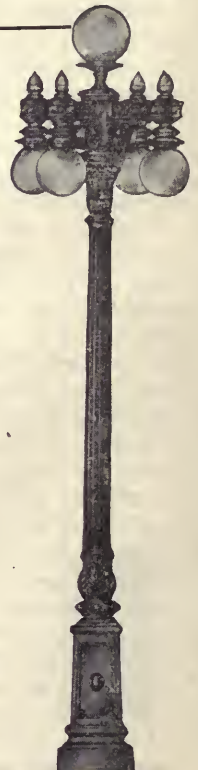
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school boards are awakening to the responsibilities placed in their hands. It may require a repetition of the horror at Collinwood to rouse some of them to action, but sooner or later the fire-trap school building must become obsolete.

Educational institutions outside of the public schools are likewise showing a tendency to reform in their methods of construction. More fireproof college and educational institutions were built in the past year than ever before in the history of the country. Out of 150 educational buildings reported, 20 were fireproof, 30 partially fireproof, and the rest non-fireproof, which represented almost anything from the worst to brick-filled structures. College dormitories have frequently caused great loss of life through lack of adequate fireproofing and fire protection, and they stand as a menace to the lives of boys and girls.

Out of 322 educational institutions, which include private schools for boys and girls and colleges of the better class, it was found that 25 per cent were of frame construction and the others chiefly of brick. A large percentage of the latter had wooden floors and roofs, and in some instances wooden stairways. Fire escapes were reported on the dormitories of 175 colleges, while over 100 made no claim to any such life-saving provisions. More than 100 of the institutions examined had only one means of exit from the dormitories, and 60 reported two stairs on opposite ends of the buildings.

Educational institutions in the country or in small villages and towns are under no special regulation for fire protection and fire prevention. Even if local laws do not regulate them in this respect, there is no state law to compel them to provide for the safety of their students. It was found that upward of 50 of these educational institutions were located more than a mile from any fire department, and there was no way of sending in a fire alarm except by telephone. Some claimed to have a volunteer fire-fighting department, and that fire drills among the students and employes were practiced, but 25 had not made even such provision against a fire.

Poorly equipped as the colleges and private educational institutions may be in respect to fire protection, they do not excite our interest and sympathy so much as the public school building that does not comply with the great human law of protection from disasters by fire. The laws are mandatory that children shall attend school; and if we are going to force them into public buildings we must see that they are surrounded by every available means of protection from harm. If private educational institutions do not bring their dormitories and other buildings up to the standard of modern scientific construction, no one is forced to send his children to them. The correction of the evil in this direction can then come through the non-support of the institutions by those who realize the danger that exists from fire.



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Challenging each to each."*

—Kipling



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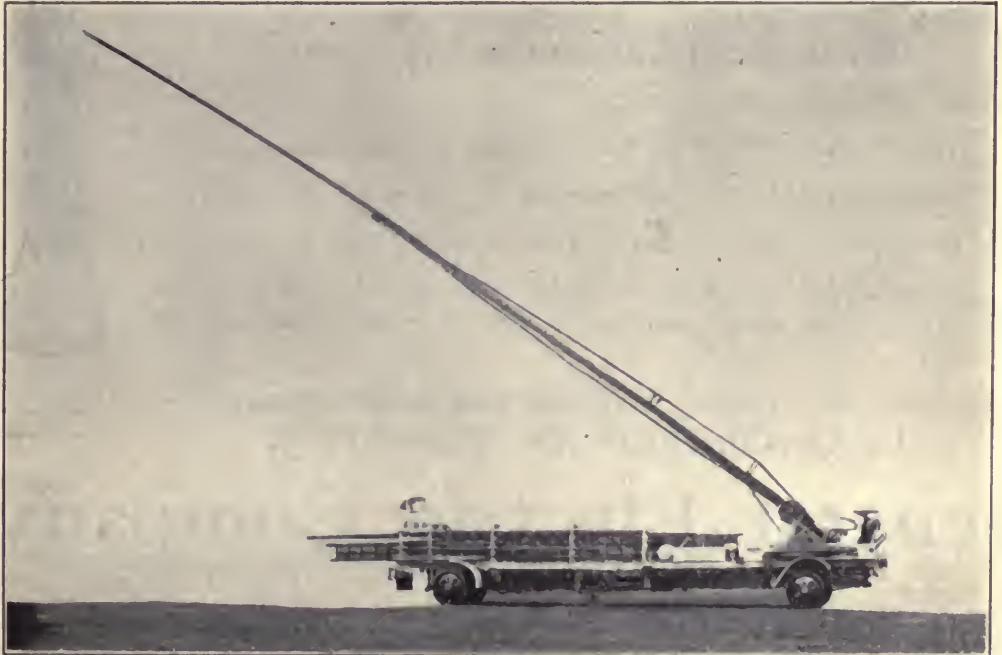
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This illustration shows a part of installation of G-E Ornamental Luminous Arc Lamps in Lynn, Mass.

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The "WHITE WAY" type for the business thoroughfares.

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The beautiful, soft, yet brilliant light from these lamps, together with the artistic poles, add a charm and attractiveness to any city.

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Type of pole
used in
Lynn, Mass.

THE FOREIGN DEPARTMENT

A Record of Municipal Progress Abroad

Conducted by Edward Ewing Pratt, Ph. D.

A Municipal Housing Bureau for Berlin

The new Municipal Housing Bureau of Berlin was formally established on April 1, 1913. Its object is to provide better dwellings for the working classes, and it is directed by a body of city officials. It will coöperate with the King Frederick Foundation for the Encouragement of Small Dwellings, with the Special Commission on Housing and with all societies interested in the housing problem. The cost of running the new Bureau is estimated at \$25,000 a year.

✦ ✦

English Workmen's Houses

The Local Government Board is giving much serious thought to the subject of workmen's houses, and, in connection with schemes submitted to them by local authorities, has had occasion to consider the principles which should be observed in their construction.

In designing houses for the working classes it is considered of prime importance that they should meet the reasonable needs of the class of persons whom it is proposed to accommodate, and that houses erected by a local authority ought generally to be models for similar houses which may be erected by private persons.

As to the durability of construction, if the local authority proposes to borrow money to defray the cost of erection, the Board, in fixing the period for the repayment of the loan, could not allow the maximum period of sixty years unless the houses were to be built substantially. The Board recommends, therefore, that as a general rule the houses should be built so as to be capable of being maintained in a state in all respects fit for human habitation for a period of at least sixty years. Special circumstances might exist in some cases, making it desirable for the local authorities to construct houses of a less permanent character and to repay the loan in a shorter period of time.

The type of dwelling judged to be most desirable for ordinary circumstances is the self-contained house. Blocks of buildings

or two-family houses are considered neither as healthy nor as comfortable. The arrangement of houses on a site must depend, of course, on the character of the land, but in each instance the house should be so located as to give the best outlook to the living room.

The Board objects to the construction of rows of houses, not only because of the danger of overcrowding the site, but because they give a monotonous and depressing appearance and prevent easy intercommunication between streets. Where it is necessary to erect houses in rows the Board recommends that they shall be set back sufficiently from the street line to allow small gardens or forecourts, and that back streets shall be built to facilitate delivery of coal, provisions, etc.

The Board pronounces a house containing a living room, scullery, food store, three bedrooms and necessary conveniences well adapted to the needs of the ordinary family containing from five to seven persons. The height of the rooms is fixed at eight feet, providing the ventilation is good. Stairways are to be of an easy gradient, and "winders" are to be avoided. It fixes the desirable window area of each room at not less than one-twelfth of the floor area of the room, and recommends that windows be set in sufficiently low to allow children to look out of them easily.

The material of which houses should be constructed must vary with the locality. Brickwork covered with rough cast is an economical form of construction, though not of such lasting quality as plainfaced brick work.

✦ ✦

In the Midst of Gardens

Liverpool has had a definite housing policy for a good many years. The city has always attempted to provide proper housing accommodations for persons made homeless by slum clearances, and has succeeded reasonably well. Of late years, however, the housing question has been affected by the attractions on the other side of the Mersey, whither have gone the

The COLEMAN Boulevard Lamp

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**AS BRIGHT AS THE
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It gives a strong, powerful, white light. It is simple, durable and economical. All night service, 5c. per night; midnight service, 3c. per night.

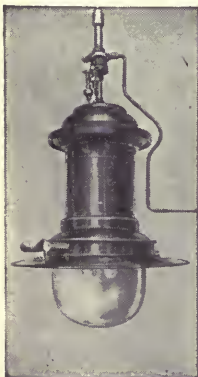
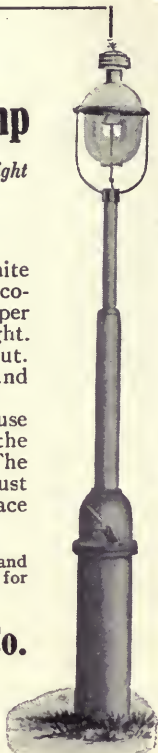
Nothing to wear out or rust out. Made of cast iron, brass, copper and glass. Absolutely storm-proof.

These lamps have been in use over six years in many cities in the United States and Canada. The City of Des Moines, Iowa, has just ordered 400 of them to replace their "blinker" lamps.

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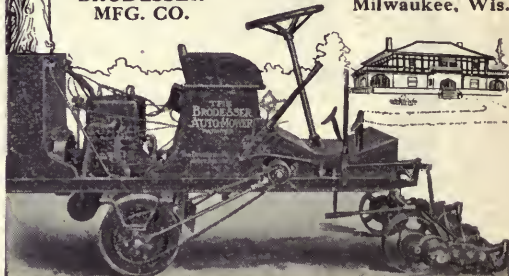
the whole lawn can be mowed quicker, cheaper and better than you ever thought of. Cuts the grass and rolls the lawn in one operation. Easiest running, cleanest cutting power mower ever invented. Weighs only about 1200 lbs. and does not kill the grass. Simply and substantially made. Steers by means of front wheels. Three-point suspension gives flexibility. Is not expensive and will pay for itself by the great saving of labor.

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people who could afford to get away from the scene of their daily toil and who did not mind the delays of the ferry traffic in foggy weather. The migration has resulted in an increasing number of empty houses in Liverpool and a general tendency toward decreased rents. The city was obliged to meet the situation, and for that purpose sanctioned the starting of a garden suburb under the direction of the Liverpool Garden Suburb Tenants, Ltd. This company has undertaken the development of an estate of 185 acres; 12 have already been built upon, and another 14 acres are being laid out. Up to date 150 houses are occupied, and the population numbers 500 persons, 148 of whom are children. Two houses on the estate have been converted into a club house, which contains a hall for entertainments; a stage for the dramatic society, a billiard room and a reading room.

The roads in the garden suburb have been carefully built with a tarmac surface, and the footpaths are edged with shrubbery and kept in fine condition.

The Company sets forth the advantages of life in the Garden Suburb as compared to ordinary town life in an interesting way:

Gardens vs. Backyard.
Playgrounds vs. the Street.
Bowling Greens vs. Nothing.
Hedges vs. Brick Walls.
Grass Margins vs. Slippery Pavements.
Healthy Living vs. Tired Feeling.
Neighborliness vs. Isolation.
Billiards and games in the evening.
Open spaces all day long.

Although the Liverpool Garden Suburb was only begun in the summer of 1910, its progress has been substantial. Thingwall is the name by which this garden area will be generally known.

+ +

Trained Meat Inspectors for England

In the large towns of England the inspection of meat is carried on with considerable care in spite of the difficulties which attend such inspection because of a large number of private slaughter houses. In smaller districts, however, the inspection is much less thorough, owing chiefly to the inadequate training of the inspectors. The Royal Commission on Tuberculosis recommended in its 1898 report that in the future no person should be permitted to act as a meat inspector unless he had passed a qualifying examination. With a view to carrying out this recommendation, the

Royal Sanitary Institute in the year 1899 established an examination for meat inspectors, and the certificate given to successful candidates is acknowledged to be an indication of competency of a high order. Up to the present about 800 certificates have been granted. It is impossible to obtain the certificate of the Institute unless a course of practical training has been undergone. A few sanitary authorities have been sufficiently enlightened to give one or more of their sanitary inspectors leave of absence to enable them to take advantage of the special training. A ten weeks' course is sufficient to prepare a man to take the Institute examinations, and there is an increasing agitation to urge more of the sanitary officials to give their inspectors this opportunity to become more efficient.

+ +

The Regulation of Motion Picture Shows in England and Germany

Both in England and Germany a great deal of stress is being laid on the regulation of motion picture shows.

English investigators claim that the educational value of the motion picture show is much exaggerated, and they are endeavoring to convince the public that certain kinds of photo-plays exert a very undesirable influence over the young.

The special committee at Liverpool, which was appointed last October to consider the proposed new rules for premises licensed for cinematograph exhibitions, recommends the establishment of a Board of Censorship, which shall give films passed on for children's performances a certificate for "universal exhibition" and those passed on for adults a certificate for "public exhibition." The committee, however, does not consider this form of censorship sufficient. It recommends that if there should be three or more well-grounded complaints against any one hall its license may be cancelled, and that children under 14 shall not be allowed to witness an evening performance unattended by an older person.

The Manchester City Council has decided that children under 14 shall not be allowed to attend a performance between the hours of nine and eleven in the evening without being accompanied by their parents or guardians. The teachers of the elementary schools in Manchester have



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You ought to know more about this fountain. Do not confuse it with the cheap, squirting bubblers, so commonly seen, which often look as if designed to give shower baths. With the Puro you get a soft sparkling bubble of water making it possible to drink naturally. Being self-closing, allows no waste of water. Positively the most Sanitary Cup on the market. Made of red metal; nickel-plated; very heavy pattern; not alone Germ, but Fool-proof; no delicate parts to get out of order—lasts a lifetime.

Let us have your address so we can send you our printed matter and illustrations of Puro and Puro Junior Fountains. Every buyer or user of Sanitary Drinking Fountains should know about the “Puro.”

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Puro Sanitary Drinking Fountain Company

HAYDENVILLE, MASS.

complained of the late hours kept by their pupils.

In Berlin, where the motion picture craze is at its height, the police regulations are particularly stringent. Not only is the censorship on films very severe, but children under six are not admitted to cinematograph theaters, and those between six and sixteen may attend only special matinees approved by the police. The rules also restrict the hanging out of any but modest bills and placards.

On March 22 an International Cinematograph Exhibition and Conference was held at Olympia, London. Several foreign countries were represented, and many societies and philanthropic institutions sent delegates to attend the proceedings. At many of the meetings films were shown to demonstrate how cinematography had aided industrial welfare, public hygiene, church, missionary and educational movements, as well as trades, town planning and nature study.



A Forestry Congress

The Touring Club of France for several years has carried on an active campaign for the protection and development of forests and has recently organized an International Forestry Congress, to be held at Paris in June, 1913. Every phase of the subject will be discussed, and particular stress will be laid on subjects of special interest to private owners of forest tracts.

Among the questions to be discussed during the proceedings the more important are:

(1) The desirability of the acquisition by the state of forests or tracts of land which require reforestation and the legislative and financial measures to facilitate this acquisition.

(2) The planting of trees along roadways.

(3) The creation and restoration of pasture lands.

(4) The beautifying of water courses.

(5) The beautifying of roads.

(6) The beauty of natural landscapes. Measures taken in different countries for their protection. New measures to be taken.

(7) Forest patrol.

(8) Plans of forests for the use of tourists. Catalogue of rare trees.

The persons who will discuss these subjects are all experts along their respective lines, and most of them are in the employ of the French Government.

German Continuation Schools

Germany does not allow her boys and girls to enter "blind alley" employments if she can help it. The German continuation school system takes hold of the boy of fourteen or fifteen as soon as he finishes the elementary school and prepares him for some particular trade or business.

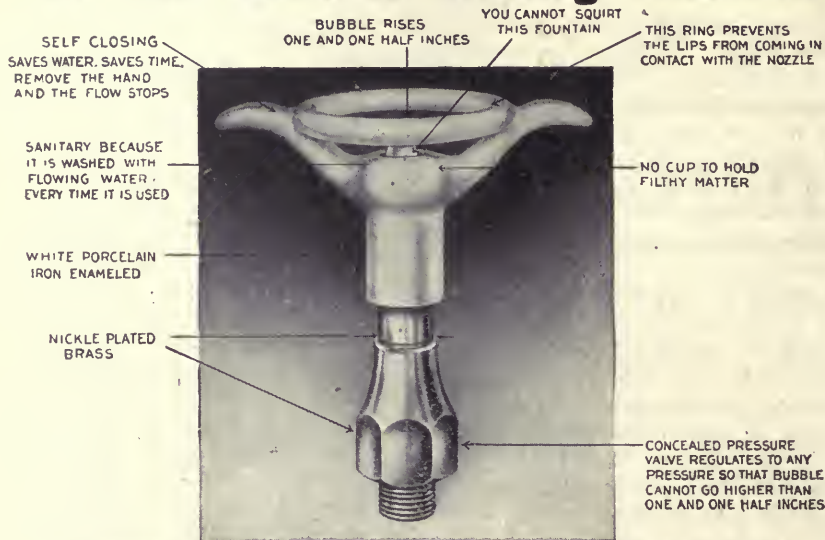
In Magdeburg boys completing the common school are assisted by the school authorities in securing desirable situations, and are required to attend the continuation schools while employed. There are classes for bakers, butchers, barbers, waiters, painters, decorators, blacksmiths, tailors, cabinet makers, and, in fact, for any occupation in which it is practicable for a boy to engage. Even if the boy does not aspire to be a skilled workman, but is content to become a street cleaner, house servant, messenger, or to engage in any form of unskilled labor, he is none the less required to spend three years in the continuation school.

In Erfurt and other Prussian cities employers are compelled by law to excuse their employes for the lesson hours without loss of pay, for from four to six hours a week. Furthermore, the employers pay the tuition fees in these industrial schools, amounting to about \$1.50 a year for an apprentice or \$1 for an unskilled worker. The main financial burden is met by the municipality, with some aid from the state. The state makes its appropriation contingent upon compulsory attendance, with the result that compulsory continuation schools are gradually replacing the optional type.

Barmen has a continuation school with an attendance of nearly 4,000. The pupils are divided into 131 classes. Among others there are classes in textiles, machine-tool making, plumbing, electric installation, house carpentry, shoemaking, upholstery, tailoring, gardening, printing, box making, baking, candy making, as well as classes for butchers, barbers and wigmakers, messengers and helpers.

Instruction in these continuation schools is by no means confined to technical branches. Beside definite vocational training, the pupils receive instruction in certain branches designed to aid them as citizens—civics, trade history, and community welfare—in addition to composition and arithmetic based chiefly on the branch of work which they have chosen.

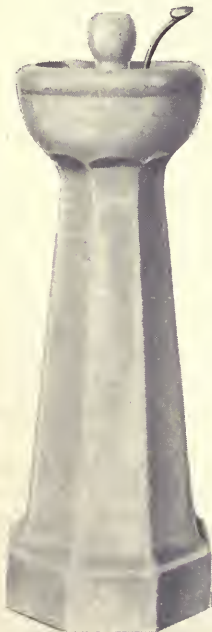
The Last Word in Drinking Fountains



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PRICE \$5.00

SPRINGFIELD SANITARY DRINKING FOUNTAINS
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Quality, Efficiency
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Fountains and
Attachments
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conditions**

*Write for drinking
fountain catalogue.*



EDWARDSVILLE BRASS CO.,
Edwardsville, Ill.

Conventions and Exhibitions

American Water Works Association

The annual convention of the Association opens on the evening of Monday, June 23, with a reception at West Hotel, Minneapolis. The business sessions will begin promptly at 10 A. M., Tuesday, June 24. Wednesday afternoon and evening and Friday afternoon of the week will be given up to excursions and entertainment. The rest of the time, morning, afternoon and evening, up to and including the morning of Friday, June 24, will be devoted to the business of the Association and the reading and discussion of papers. On Tuesday and Thursday evenings illustrated lectures will be delivered by Edward Wegman and Dr. William P. Mason. The following papers have been pledged:

The Diesel Engine for Water Works, by Edward S. Cole; Water Works Special Franchises, by Henry DeForest Baldwin; Reforestation and General Care of Water Sheds, by Ermon M. Peck; The Bacterial Count on Gelatin and Agar Media and Its Value in Controlling the Operation of Water Purification Plants, by James M. Caird; The Tuscaloosa, Ala., Water Works, by Prof. Edgar B. Kay; a paper on Filtration, by George W. Fuller; Charges for Public Water Service to Private Fire Protection Systems, by W. E. Miller; A Reasonable Basis for the Determination of Charges for Private Fire Protection, by Leonard Metcalf; Metering Private Fire Services at Kenosha, Wis., by August Baltzer; How a Private Fire Service Polluted a Public Water Supply and Some of the Consequences, by Robert J. Thomas; Modern Filter Practice, by Nicholas S. Hill, Jr.; Gravity Water Supply at the City of Manila, Philippine Islands, by H. E. Keeler; Power for Pumping Derived from Refuse, by E. H. Foster; Pumping Engines, by L. E. Strothman; Ground Water Supplies, by Charles B. Burdick; Rates and Rate Making, by Halford Ericson.

* *

A Notable Program for the New York State Mayors' Conference

One of the features of the fourth annual meeting of the New York State Conference of Mayors and Other City Officials, which will be held at Binghamton on June 5, 6 and 7, will be a symposium on municipal needs. This will occupy the entire third

session of the Conference and will be in charge of Mayor Frank J. Baker of Utica. Each mayor or some official designated to represent him will be asked to describe in five minutes his city's most important and immediate problem. After all of the cities have been heard from, a general discussion of the needs will be held.

The Mayor's Advisory Committee has completed a tentative draft of the program for the six sessions. Following the address of welcome by Mayor John J. Irving, President of the Conference, Mayor Rosslyn M. Cox of Middletown will discuss the accomplishments and aims of the Conference. Mayo Fesler, Secretary of the Ohio Municipal League, has been invited to tell the Conference what Ohio has done to give its cities home rule, and Governor William Sulzer has been asked to speak on the subject "The State and the Municipality." The Advisory Committee hopes to have Attorney-General Carmody also present at this session to describe the powers conferred upon the cities of New York State by the new Home Rule Law, enacted at the present session of the Legislature.

At the first evening session, subjects of special interest to engineers and members of municipal departments of public works will be discussed. Nelson P. Lewis, Chief Engineer of the Board of Estimate and Apportionment of New York City, will read a paper on "Proper Kinds of Street Paving for Different Conditions of Traffic," and William H. Edwards, Commissioner of the Department of Street Cleaning, New York City, will give a talk on "Keeping Streets Clean," illustrated by stereopticon.

On the afternoon of June 6, Cyrus C. Miller, Borough President of the Bronx, will lead a discussion on "What the City Can Do to Reduce the Cost of Living." The reports of the Legislative, Advisory and City Planning Committees will be received and acted upon at this session. It is also expected that the Conference at this time will take definite action on the establishment of a State Bureau of Municipal Information, plans for which have been

For Real Comfort in Drinking you need an Adjustable Fountain

The Lansing Fountain is automatically adjustable. No stooping is necessary. The bubblers are attached to flexible tubes, so that they may be raised to the height of the lips, while with all other fountains the lips must be brought to the position of the bubbler. The "Lansing" enables everyone to drink in an easy and natural position, yet with every sanitary precaution. The artistic design of this fountain renders it an ornament to any park or city street.

Let us have your address so we can send you our catalog.

The Gier & Dail Mfg. Co.
100 Grand Street
LANSING, MICH.



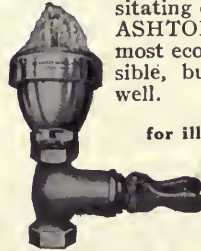
Save Money and Health

Both by Installing
**Ashton Sanitary
Bubbling
Drinking Fountains**



Adaptable for use in public buildings or parks, schools, factories, etc., and readily attached to ordinary faucets without necessitating expensive changes. In the ASHTON you not only have the most economical arrangement possible, but absolute sanitation as well.

Write to-day
for illustrated printed matter.



The Ashton Valve Co.
271 Franklin Street
Boston, Mass.



Grass and Weed Killed in Roadways and Gutters for \$.70 per 1,000 sq. ft. By the Use of "HERBICIDE," the Weed Exterminator

You may say you can do it for less by hand, but in figuring you must take into consideration the fact that it will be necessary to go over the ground at least half a dozen times a year if the roads and gutters are to look even half way presentable.

When you figure on the use of "Herbicide" you have to figure on one application only, and its effect is evident for several years at least, for Herbicide not only kills both tops and roots of weeds treated, but makes the treated ground sterile.

"Herbicide" is used by hundreds of cities, parks and cemeteries as it is a great saver of labor and expense. The picture above shows one roadway system where grass and weeds have been eliminated by "Herbicide."

Drop us a line and we will be glad to send you our literature and quote you on as many barrels as you could make use of.

THE READE MANUFACTURING COMPANY

1020 Grand St., Hoboken, N. J.

drafted and submitted to the mayors of the state for consideration.*

Professor George C. Whipple of Harvard University will read a paper at the fifth session on "Sewage Disposal—What Can the City Do to Solve the Problem?" Prof. Joseph French Johnson, a member of Mayor Gaynor's Commission on New Sources of City Revenue, will discuss ways and means of raising revenue for support of municipal administrations.

At the final session Dr. Talcott Williams, Director of the School of Journalism, Columbia University, will discuss "The Newspaper and Its Relation to the Municipality." The Advisory Committee is planning to have considered also at this session "The State's New Policy in Health Work and How It Will Affect the Municipalities." The speaker on this subject has not yet been announced.

Assurances have been received that every city in the state will be represented at the Conference this year either by its Mayor or some city officials appointed by him as delegates. Secretary W. P. Capes is planning for the accommodation of between 300 and 350 officials.

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SOME COMING EVENTS

MAY 5-7.—CHICAGO, ILL.

National Conference on City Planning. Secretary, Flavel Shurtleff, 19 Congress Street, Boston, Mass.

MAY 6-10.—RICHMOND, VA.

Playground and Recreation Association of America. Annual Meeting. Secretary, H. S. Braucher, 1 Madison Avenue, New York City.

MAY 8-9.—WASHINGTON, D. C.

National Association for the Study and Prevention of Tuberculosis. Annual Meeting. Executive Secretary, Livingston Farrand, M. D., 105 East Twenty-second Street, New York City.

MAY 12-14.—FORT WORTH, TEX.

Southwestern Water Works Association. Secretary, E. L. Fulkerson, Waco, Tex.

MAY 13.—BALTIMORE, MD.

American Association for Promoting Hygiene and Public Baths. Permanent Secretary, William H. Hale, Ph. D., Municipal Building, Brooklyn, N. Y.

MAY 15-20.—BOSTON, MASS.

National Congress of Mothers. Secretary, Mrs. A. A. Birney, 806 Loan & Trust Building, Washington, D. C.

JUNE 2-6.—CHICAGO, ILL.

National Electric Light Association. Annual Convention. Executive Secretary, T. Commerford Martin, 29 West Thirtieth Street, New York City.

JUNE 5-7.—CHARLESTON, S. C.

Southern Commercial Secretaries' Association. Secretary, A. W. McKeand, Raleigh, N. C.

JUNE 5-7.—BINGHAMTON, N. Y.

Conference of Mayors and Other City Officials of the State of New York. Secretary, William P. Capes, 105 East Twenty-second Street, New York City.

JUNE 18-20.—PORTLAND, ORE.

American Association of Nurserymen and Pacific Coast Nurserymen's Association. Joint Convention. Secretary, American Association of Nurserymen, John Hall, 204 Granite Building, Rochester, N. Y.

JUNE 23-27.—MINNEAPOLIS, MINN.

American Water Works Association. Annual Convention. Secretary, J. M. Diven, 47 State Street, Troy, N. Y.

JUNE 23-28.—LONDON, ENGLAND.

International Roads Congress. Secretary, W. Rees Jeffreys, Queen Anne's Chambers, Broadway, Westminster, London, S. W., England.

JUNE 24-26.—SPRINGFIELD, ILL.

American Association of Officials of Charities and Correction. Secretary, W. T. Cross, Columbia, Mo.

JUNE 24-28.—ATLANTIC CITY, N. J.

American Society for Testing Materials. Annual Meeting. Secretary, Edgar Marburg, University of Pennsylvania, Philadelphia, Pa.

JULY 5-12.—SEATTLE, WASH.

National Conference of Charities and Correction. Secretary, Alexander Johnson, Angola, Ind.

AUGUST 4-5.—LONDON, ENGLAND.

English-Speaking Conference on Infant Mortality. Under auspices of the British National Association for the Prevention of Infant Mortality and for the Welfare of Infancy. Secretary, American Committee, Dr. Philip Van Ingen, 125 East Seventy-first Street, New York City.

AUGUST 26-28.—CEDAR POINT, OHIO.

The Central States Water Works Association. Annual Meeting. Secretary, R. P. Bricker, Shelby, Ohio.

SUMMER, 1913.—GHENT, BELGIUM.

First International Congress on Art of Town Planning and Organization of Municipal Life. General Secretary, Paul Saintenoy, Brussels, Belgium.

* See THE AMERICAN CITY for March, 1913, page 243.

CHEMICAL WEEDING *is* PERMANENT



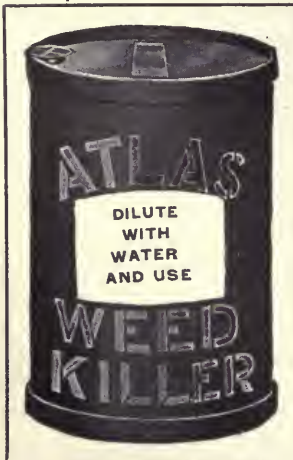
Atlas "A" Weed and Grass Killer

is the most efficient chemical because it is concentrated to the point of weighing $13\frac{1}{2}$ lbs. to the gallon, covers more surface, has greater staying qualities and always fulfills to the letter the work it is guaranteed to accomplish.

Does not harm animals.

The cost, including application, is less than that of hand weeding and can be figured at $\frac{1}{2}$ c. per square yard as against $1\frac{3}{4}$ c. per square yard for road scraping or hand weeding.

Atlas "A" Weed Killer is sold in six-gallon steel drums, fifty-gallon steel barrels and tank cars.



We have the proofs and we will send them to you if you will write us for particulars today.

**ATLAS PRESERVATIVE
COMPANY of AMERICA**

95-97 Liberty Street, New York

and

**WINDMILL LANE WHARF
Deptford, London, S. E., England**



Items of Civic and Municipal Progress

This Month's Front Cover

Usually it is only upon the grounds of the wealthy that there are many specimens of magnolias. The trees are expensive and slow-growing, and one or two fine specimens afford matter for pride to the wealthy owner.

Rochester, however, has a public magnolia garden. It is on Oxford Street, and the front cover of this issue of THE AMERICAN CITY shows a portion of it as it blooms each year, about the first week in May. It is a glorious sight, and more than ten thousand people have been known to come to Oxford Street to see the magnolias in bloom on one May Sunday.

Why could not other American cities thus feast the eyes of their citizens? Enough money is spent each year in one large American city in foolish electrical displays to welcome the Grand United Order of Plumbers, or the Associated Union of Hod Carriers, or the Master Guild of Bar Tenders, to provide half a mile of magnolia glory. J. HORACE MCFARLAND.

+ +

Progress in the Schoolhouse Social Center Movement

New York and New Jersey have made notable progress this year in the advancement of the school house social center movement, in which President Wilson has taken such a large interest. Before he left New Jersey he said in his message to the legislature on this topic:

"A great movement has sprung up in this country in recent years which centers around the schoolhouse as a place of neighborhood conferences in all matters affecting the public. Convenient and inexpensive meeting places ought to be supplied at the public expense. It ought not to be necessary to hire a hall whenever it is desired to have a public meeting. The owners of halls charge high prices when they can, and are often partisans and will not let their halls at all to those whom they wish to defeat or embarrass. Every community has its schoolhouses. They ought to be available for every kind of proper neighborhood meeting out of school hours. If local school boards are illiberal or partisan or unreasonable, they ought to be commanded in their duty in this matter by statute."

In New Jersey, Assemblyman Charles

O'Connor Hennessy, one of the Wilson leaders in the legislature, drafted a bill which is brief, clean-cut and radical. Its substance is thus expressed:

"The Board of Education of any school district may, subject to reasonable regulations to be adopted by said board, permit the use of any schoolhouse and rooms therein, and the grounds and other property of the district, when not in use for school purposes, for any of the following purposes:

"(a) By persons assembling therein for the purpose of giving and receiving instruction in any branch of education, learning or the arts.

"(b) For public library purposes or as stations of public libraries.

"(c) For holding social, civic and recreational meetings and entertainments, and such other purposes as may be approved by the Board of Education.

"(d) For meetings, entertainments and occasions where admission fees are charged.

"(e) For polling places, for holding elections, and for the registration of voters, and for holding political meetings."

It may be seen that this, broadly speaking, permits the use of the school building for any sort of a meeting or gathering that the local public opinion will approve. The bill, however, has a provision giving a right of appeal to the State Commissioner of Education by anyone deemed to be aggrieved by the granting or the refusal to grant a particular use of the school house that might be desired.

The Hennessy bill passed both houses of the legislature with little opposition, and became a law. Shortly afterwards a similar bill passed the New York legislature, and was approved by Governor Sulzer. The New York act, however, is more limited in its scope than that of New Jersey, as it provides in substance that the use provided for the schoolhouse must be non-sectarian and non-exclusive.

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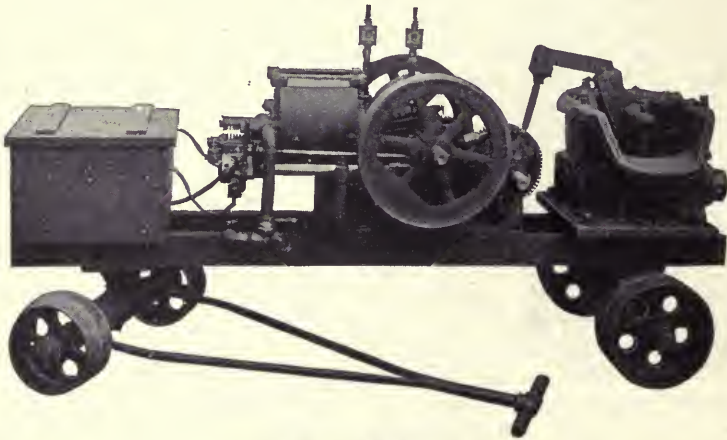
Detroit Votes for Municipal Ownership of Street Railways

At an election held on April 7, the citizens of Detroit, Mich., by a considerable majority of the ballots cast, voted affirmatively on the following question:

"Do you favor authorizing the city of Detroit to acquire by purchase or condemnation

Atlantic Diaphragm Pumping Engines

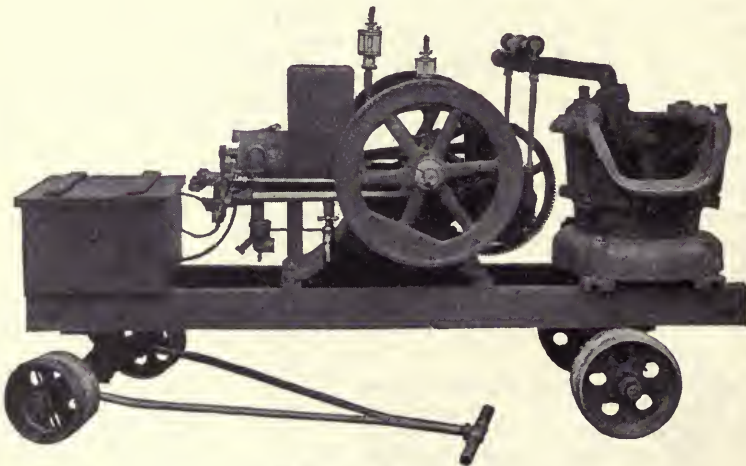
3-INCH PUMP



Code Word "Atlapump."

Engine, 3½-in. bore, 3½-in. stroke; water hopper cooler cylinder; automatic governor; jump-spark ignition, geared 10 to 1, pump speed 40 to 50 strokes per minute, consumes one pint of gasoline per hour, pump 3-in. side inlet with guaranteed diaphragm. **List Price, \$150.00.**

4-INCH PUMP



Code Word "Atlaliftpump."

Engine, 4-in. bore, 4-in. stroke, attached to 4-in diaphragm trench pump, *double the pumping output of 3-in. pump*, all gears have cut teeth, water jacket and cylinder frost-proof, weight complete, about 900 lbs. **List Price, \$165.00.**

OUR OFFER: We will send an **Atlantic Pumping Engine** to any responsible party, with the privilege of five days' trial. If it is not exactly as represented, and superior to other equipment of the same kind, it may be returned to us and we will pay freight both ways.

Telegraph or write for net prices and full description.

HAROLD L. BOND COMPANY

Manufacturers of

Ross Concrete Spade, Andrews' Concrete Tamper, Safety Trench Braces, Felton's Sewer and Conduit Rods, etc.

383 W ATLANTIC AVE., BOSTON

39 W CORTLANDT ST., NEW YORK

or construction and to own and operate street railways within the city of Detroit and within a distance of 10 miles from any portion of its limits, and to provide for the cost thereof by an issue of bonds of the city of Detroit to the amount of two per cent of the assessed valuation of the real and personal property of the city and other bonds upon the property and revenues of the street railway, including a security franchise?"

As to the practical results of this election, a prominent citizen of Detroit writes to *THE AMERICAN CITY* as follows:

"While I voted for municipal ownership and favor it, yet I feel as do most all other candid observers that there is no practical significance to the election. The city voted five or six years ago for municipal ownership with no appreciable effect. What will now happen will be a long legal fight as to the validity of the law under which the election was held, and I am afraid it will be many years before we have any tangible results. The street car fight is now a twenty-year-old matter in Detroit, and we are not deceiving ourselves into believing that we are going to get results right off."

✦ ✦

Philadelphia's Vice Problem

A unanimous report submitted last month by the Mayor's vice commission places Philadelphia in the ranks of Chicago, New York and those other large cities which are endeavoring to remedy their moral conditions. The commission confirms the findings of other students, who recommend that sex hygiene and pathology be taught in the schools and that health certificates be required for the issuance of marriage licenses. Among its other recommendations are:

That segregation and all efforts to continue that practice here be abandoned.

All measures of suppression to be freed from the spectacular.

That prosecutions for the suppression of the evil in the future be directed first against the owners of the houses.

That the Department of Health be empowered to supervise the registration of diseases.

That a night court be established and a court committee be appointed to look after these cases.

Social service departments in all establishments where men and women are employed together.

Appointment of women to the police force.

Appointment of women to all institutional boards by which women or children are treated for correction.

Strict supervision of places of amusement.

Strict supervision of employment agencies.

Better police supervision of Fairmount Park, which is characterized as one of the most pernicious places for the teaching of immorality.

Enactment by the Legislature of laws regulating registration of social diseases, letting of houses for immoral purposes, punishment of street women, and the sale of habit-forming drugs.

That the Legislature raise the age limit of consent to 21 years; that it establish a state reformatory for women, and that a law be passed excluding messenger boys from immoral resorts.

✦ ✦

Los Angeles Discontinues Its Municipal Newspaper

One of the eighteen charter amendments submitted to the voters of Los Angeles on March 24 has resulted in the discontinuance of the *Los Angeles Municipal News*. The vote of 24,089 to 15,778 was a surprise to many, and the result is ascribed by some local observers to a tricky wording of the measure.

In commenting on the need for publicly-owned newspapers, *The Public*, of Chicago, says editorially in its issue of April 18:

"The starvation of the *Los Angeles Municipal News* by a recent referendum in that city is to be regretted. A well-edited paper for the purpose of supplying trustworthy information on important subjects, it was also a fair forum for all public questions. So promising an effort to promote public intelligence is not likely to be wholly abandoned. If the people of Los Angeles do not realize their mistake and revive the experiment, other self-governing cities are not unlikely to experiment along similar lines for themselves. The notion that privately-owned newspapers will supply the need is not well founded. In an editorial approving the killing of the *Los Angeles Municipal News*, the *Chicago Record Herald* says: 'If the people want more news of municipal, state and other governmental or administrative bodies, that demand will be supplied by one or another of the alert progressive newspapers.' This is true, but with the tremendous reservation that they will do so only in case the want of the people in that respect is the kind of want that expresses itself in money purchases. If the people are not eager to buy such information, privately-owned newspapers will not—cannot afford to—load their columns with it. They are more likely to substitute emasculated or distorted and therefore misleading information. To argue that there should be no public newspapers because private newspapers will publish 'news of municipal, state and other governmental or administrative bodies' if it is wanted, and if it is not wanted it ought not to be published, is no better argument against publishing at public expense such a paper as the *Los Angeles Municipal News* than it would be against publishing at public expense municipal, state and other public reports. Every such objection to a public newspaper is an objection to governmental publicity."



Cleaning up the wreckage in the heart of Dayton, Ohio

“Pass This Wagon—Reserved for Relief Work”

John H. Patterson.

The Dayton, Ohio Relief Committee, headed by John H. Patterson, President of the National Cash Register Co., has bought seventy-five (75) TROY Dump Wagons since the flood.

Twenty-five were ordered on Wednesday, April 2nd. All of them were shipped on Friday, April 5th.

These did such good work that fifty more were ordered on Thursday the 17th—they were shipped on the 19th.

If you think the Dayton Committee bought on price, let us tell you our figures and those made by the other wagon companies.

They were looking for *service* and *quick action*. They are up against the greatest clean-up problem any city has ever faced and they are handling it right.

They needed wagons that would be on the job every minute of every day till Dayton is Dayton again. So they bought 75 TROYS and those TROYS will still be working faithfully when the flood is only a memory.

Let us give you detailed information about the wagons Dayton bought. Remember they were bought by a picked committee from a *service* standpoint alone. Doesn't it stand to reason that the wagons which were best for Dayton would be best for *others*—*you*? Get Catalog K and the price.

THE TROY WAGON WORKS CO., Water St., Troy, Ohio

Relief Station at Dayton, Ohio



A Study of Municipal Civil Service

A study concerning the extent of civil service examination in cities of over 30,000 inhabitants was made public last month by the Bureau of the Census. Of 193 cities to which inquiries were sent, answers were received from 185. Of the latter number, 76 do not require any examination as a condition precedent to appointment in city departments, 32 require examination of candidates for some, but not all, departments, and 77 require examination for appointment to all departments. In the following table it is seen that, although the large cities have comprehensive civil service provisions, the smaller the city the less likely it is to have this method of testing the fitness of candidates for municipal employment:

| Population. | Total Cities Reporting. | Percentage Not Requiring Examination. | Percentage Requiring Examination. | |
|---------------------|-------------------------|---------------------------------------|-----------------------------------|------------|
| | | | Some Depts. | All Depts. |
| Over 300,000. . . . | 18 | 1.1 | 1.1 | 7.7 |
| 100,000-300,000. . | 35 | 3.8 | 3.8 | 11.3 |
| 50,000-100,000. . | 54 | 16.0 | 3.8 | 8.8 |
| 30,000-50,000. . . | 78 | 19.7 | 8.7 | 14.2 |
| Total. | 185 | 40.6 | 17.4 | 42.0 |

It has come to be general practice to appoint school teachers after competitive examination, and to a less extent this method is being applied to police and firemen. Such protracted struggles as the five-year battle for state-wide municipal civil service regulation started in New Jersey by Senator Colby in 1906 are of the past. The present task is the education of popular opinion as to relationship between civil service reform and efficient democracy.

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City Advertising

A fine example of city advertising was shown in the exhibit of the city of Ottawa at the Travel and Vacation Exhibition held in New York March 20-29. A view of this is herewith reproduced. Its simplicity, dignity and beauty made it distinctive, and brought forth the special admiration of some of the foremost advertisers in the country. It was designed and arranged under the personal supervision of Herbert W. Baker, Commissioner, Publicity Bureau, Ottawa. Each photograph was in one piece, 15 feet by 5½ feet over all, and had an 8-inch moulding with an oxidized copper title plate. The effect of these nine large, perfectly executed photographs was superb, and their message direct and convincing.



EXHIBIT OF THE CITY OF OTTAWA, CANADA, AT THE RECENT TRAVEL AND VACATION EXHIBITION IN NEW YORK



LESS EXPENSE *and* CLEANER STREETS

BY THE USE OF

The Etnyre Uniform Pressure Street Flushers

Which will show from 30 to 50% greater efficiency than any other type.

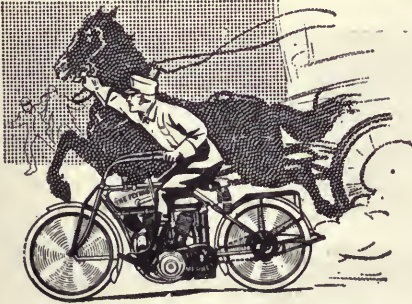
Time and money saved both in filling and emptying tank. Generous strength in every part, with simplicity of construction and ease of operation, combine to make the ETNYRE the best Flusher on the market.

LET US TELL YOU ALL ABOUT IT

We make also a complete line of Motor Truck Sprinklers and Flushers, as well as Horse-drawn Street Sprinklers and Road Oilers.

Write us for catalogue and further details

E. D. ETNYRE & COMPANY
Oregon, Illinois U. S. A.



Always Ready for Any Emergency!

With its Self-Starter and Two-Speed Gear the 1913 Flying Merkel Motorcycle is always ready for instantaneous use. These features and the fact that the Flying Merkel Motorcycle is the most economical in the world to operate has led to its universal adoption by Police Departments, Park Boards, Gas Companies, Telephone and Electric Light Companies and all other business concerns and individuals whose requirements demand a sturdy, reliable motorcycle at the minimum cost of upkeep.

**"The Flying Merkel Made Its
Name on Merkel Mileage."**

Free Art Catalog on Request.

THE MIAMI CYCLE & MFG. CO.

520 Hanover St. Middletown, Ohio, U. S. A.



THE CITY OF *Milwaukee*

has recently bought a car of Watson asphalt wagons. Remember these are real asphalt wagons. They are not merely grading wagons lined with steel and asbestos and palmed off as asphalt wagons.

Other cities who have recently bought Watsons are Newark, N. J., Lansing, Mich., Waycross, Ga., Jacksonville, Fla., and Savannah, Ga. Then there's a list of over fifty other cities that are saving money in the same way. We want to send it to you.

If you're tired of buying cheap wagons, better investigate the Watson. It will cost you more, but you will be glad of it in the end.

WATSON WAGON CO. CANASTOTA, N. Y.

The World's Largest Builders of Dumping Wagons

BRANCH OFFICES:

| | | | |
|-------------------------|---|---|-------------------|
| 256 Broadway | - | - | New York, N. Y. |
| 1102 Farmers Bank Bldg. | - | - | Pittsburgh, Pa. |
| 1391 Main St. | - | - | Buffalo, N. Y. |
| 604 Witherspoon Bldg. | - | - | Philadelphia, Pa. |

Municipal and Civic Publications

Copies may be ordered of THE AMERICAN CITY

NATIONAL BOARD OF CENSORSHIP OF MOTION PICTURES.

Suggestions for a Model Ordinance for Regulating Motion Picture Theaters. 1913. 15 pp. 10 cents

The National Board of Censorship has formulated these suggestions after studying the methods of regulation in practice in the United States and foreign countries. Most of the suggestions are taken from the report of the Commissioner of Accounts of New York City and of the Mayor's Commission on Motion Pictures. General considerations and facts are first given, and then details of regulation applicable in all our cities. The subject is handled with full recognition of the place which motion pictures fill in the field of public education.

"The motion picture is a form of journalism, of editorial discussion and of platform discussion. In view of this fact, motion pictures must from the outset be treated with that respect which is given to art, free press and free speech. They should not be subject to inquisitorial control or censorship before they are publicly exhibited, any more than such methods should be applied to newspapers, theaters or the pulpit. The motion picture may within a few years become the most important vehicle of free public discussion in America."

CARY, C. P., Wisconsin State Superintendent of Schools.

Wisconsin Arbor and Bird Day Annual, 1913. (Compiled by O. S. Rice, State Library Clerk.) 109 pp. Illustrated. Free

This Annual is intended to be used in schools not only on Arbor Day, but throughout the year, in connection with the regular school branches and in general exercises. It seeks to present to the children the ideal of conserving, appreciating and using wisely our natural resources. To that end it contains articles on forestry, bird life, our vanishing wild life, fire prevention and good roads. There are a number of colored plates of birds of Wisconsin, a small collection of nature poems and three songs about birds and flowers.

CLAY, S. H., Secretary of the Lexington (Kentucky) Commercial Club.

City Building. 1913. 164 pp. \$5.00

The purpose of the book is to help commercial secretaries to work along progressive lines in making cities better places in which to live and do business. It takes up ways of keeping a commercial organization alive and growing; various plans of locating industries; securing, organizing, financing and entertaining conventions; extensions of wholesale and retail trade; street building and cleaning; transportation; the City Beautiful; the relation of the schools to the industrial interests of the city; government by commission; good roads; the relation of the city to the agricultural community.

WILBERT, MARTIN I., and
MOTTER, MURRAY GALT.

Digest of Laws and Regulations in Force in the United States Relating to the Possession, Use, Sale and Manufacture of Poisons and Habit-Forming Drugs.

(Public Health Bulletin No. 56. Prepared by direction of the Surgeon-General.) November, 1912. 278 pp. 25 cents

CHARITY ORGANIZATION SOCIETY OF THE CITY OF NEW YORK.

New York Charities Directory. (Compiled by Lina D. Miller.) 1913. Twenty-second edition. 865 pp. \$1.00

This volume lists over 3,500 of the charitable, social and religious agencies of the city, with a limited number of those of the state and nation. By it can be determined at once where to send an individual needing any kind of assistance. Some of the groups of relief agencies are: Food, fuel, clothing and general relief, fresh-air charities, hospitals, education and training, state and municipal boards, settlements. The information is carefully compiled, and, although rigidly condensed, it is sufficiently complete to meet all ordinary demands. The directory includes agencies for the relief of children, immigrants, the unemployed, the aged and infirm, the sick, tubercular, incurable blind, deaf and dumb, crippled, insane or feeble-minded and inebriates. The directory is not in any sense an endorsement of the organizations enlisted, but every one listed has been required to submit enough data in regard to its work so that its general efficiency is assumed. A new department, a name index, has been added this year. There are given names of 8,000 persons connected with the 3,500 institutions, as officers, directors or secretaries. This list is a "Who's Who?" of social workers in New York, and is invaluable as an introduction to the people interested in such work.

THE ART COMMISSION OF THE CITY OF NEW YORK.

Report for the Year 1911. 1913. 51 pp. Illustrated. Free

In addition to the account of the work accomplished by the Commission during the year, there are some interesting and valuable suggestions in regard to the design and placing of tablets, the use of ready-made monuments and layouts for buildings and grounds.

STECHE, WILLIAM A., B. S. G., Director of Physical Education in the Public Schools of Philadelphia.

A Guide to Track and Field Work Contests and Kindred Activities. 1912. Revised edition. 47 pp. Illustrated. 50 cents

A booklet treating the technique of track and field work from the standpoint of the average classroom teacher of gymnastics.

AMERICAN HIGHWAY ASSOCIATION.

Good Roads Year Book. (Edited by J. E. Pennybacker.) 1913. xii + 548 pp. Illustrated. \$1.00

This volume summarizes important data on road legislation, construction and maintenance, presented in non-technical form. It is an excellent reference book and guide to further reading as suggested in the bibliographies given. The chapter on bond issues is based upon reports from more than 80 per cent of the counties in the United States, and has been compiled and checked with great care. The chapter on "Road Systems of Foreign Countries" is a feature not heretofore treated in the Year Book. The various progress reports from state highway departments bring out some interesting points.

A REAL ROLLER

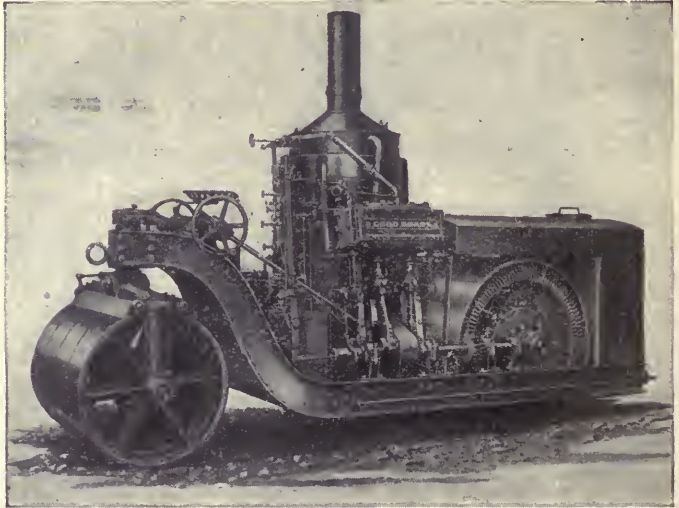
For towns and cities that want serviceable machines

The Monarch Tandem Roller

is better built, develops more power, is more easily operated and controlled, and will last longer than any other roller of this type.

This roller can be used in rolling park and cemetery drives, repairing brick and macadam streets, and in laying asphalt.

No town or city should be without a tandem roller. THE MONARCH is the roller.



The Monarch Tandem Roller.

HANDSOME CATALOGUE ON REQUEST

The Good Roads Machinery Co., Inc., Kennett Sq., Pa.



Road Oiling

AND

Street Sprinkling

¶ Let us figure with you before you make your contracts this year. There's a saving of money in it for your community.

¶ We have the experience, the apparatus and the determination to handle this work for you in a way which will enable us to hold your business year after year. Why not drop us a line to-day and let us know what you have in mind? Our suggestions will cost you nothing and may open your eyes to some possibilities you had not thought of.

American Car Sprinkler Co.
WORCESTER, MASS.
Specialists on Road Oiling and Street
Sprinkling



NEWS *from the* MANUFACTURERS

METHODS
MATERIALS &
APPLIANCES

Influence of the Motor Truck in Relieving Traffic Congestion

By R. W. Hutchinson, Jr., M. E.

International Motor Company

THOSE who have made a serious study of motor transportation know that the traffic delays incident to the moving of merchandise in every city of 100,000 or more population runs into millions of dollars every year. The situation, instead of showing any relief, becomes more aggravated from year to year.

In all of our large cities traffic reform legislation has been agitated during the past ten years. Although these measures have brought about some improvements, the betterment is of relatively insignificant value. While the restriction of business traffic to certain streets in congested centers does effect some relief, such relief is but temporary, because of the physical limit to the number of vehicles that can be accommodated in any given width and length of street. This statement needs no mathematical proof; it is axiomatic in its truism. The question of relief of traffic congestion is a much bigger problem than one of routing business vehicle traffic over certain streets and delegating traffic policemen to prevent accidents and the "lumping" of a large number of vehicles at any given point. The problem is one of either making wider streets, which is obviously impossible at this day in the architectural development of cities, or of changing the motive power of the vehicle.

The latter solution of traffic congestion is the only sensible, practical and permanent solution of the growing evil. As the length of the vehicle is a most important factor in preventing traffic congestion, naturally the relief must come through the general utilization of self-propelled vehicles. In using a horse-drawn business vehicle the "wheel base" of the motive power—the horses—is nearly equal to that of the vehicle; in other words, space is becoming such a premium in large cities that, economically speaking, the use of horse-drawn vehicles is bringing about a collective and individual economical loss for which we all must pay a tax. This tax appears indirectly as one of the principal factors in the present high cost of living. Of all things transportation, efficient

and economical, constitutes one of the biggest items in the expense of merchandise distribution.

To put the matter in more concrete form, let us analyze briefly the ratio of the space occupied by a horse-drawn vehicle and a motor truck. A single-horse delivery wagon, for illustration, has an over-all length of about 18 feet, and occupies 90 square feet of area. To house this one-horse vehicle demands 114 square feet of ground space. The business motor vehicle, which on an average could do as much work as two of the one-horse delivery wagons, has an over-all length of about 10½ feet, or a total of 60 square feet of area, whether on street or in a garage. Here is a saving of valuable street space of practically 33½ per cent and approximately 60 per cent for dead storage. For larger capacity vehicles the comparison is more startling. A 5-ton horse truck needs 25 feet on the street, or 200 square feet of space; the stabling area of the same horse equipment represents 281 square feet. A 5-ton motor truck of equal capacity and doing as much work in some cases as half a dozen two-horse teams takes up only 176 square feet on the street or in the garage.

If the economy in street space was the only ground on which the business motor vehicle could base its claim for effecting traffic reforms, this alone would justify its more general use by the business public. Economy in valuable street space is, however, but one of the many ways in which motorized transportation can eliminate an enormous waste which we suffer from the delays in getting our merchandise used over city streets to-day. It can be proven to the satisfaction of any skeptic that a good motor truck can do as an average two and one-half times as much work in an equivalent time as the horse, which increased rate of speed of doing work economizes street space to an extent of approximately 75 per cent in favor of motorized traffic as against horse-drawn vehicles. In other words, the same amount of work can be done with about one-quarter of the street congestion, or quadruple the present

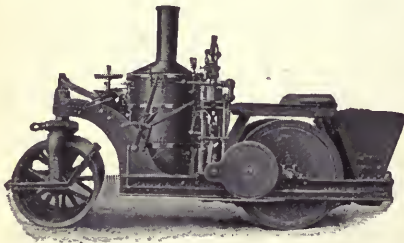


The Ohio Kerosene Roller

A ten-ton, two-cylinder, 30 H. P. Kerosene Road Roller, 6 ft. 6 in. in width. A roller that is heartily endorsed by every user.

WRITE FOR CATALOG

THE OHIO TRACTOR MFG. CO.
MARION, OHIO



Buffalo Pitts Double Drive Tandem Roller

Buffalo Pitts Road Rollers

Our double drive tandem rollers are especially designed for parks, cemeteries and for laying all kinds of block and plastic pavements.

Built in all sizes, 2½ to 10 tons. Write for catalogue.

Buffalo Steam Roller Company
BUFFALO, N. Y., U. S. A.

"The General Utility Implement"

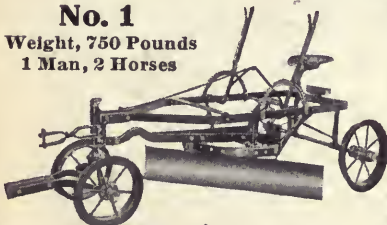
THE GLIDE

GRADER — LEVELER — DITCHER

The Best All-Round Road Machine

No. 1

Weight, 750 Pounds
1 Man, 2 Horses



MADE IN TWO SIZES

Two strongly built, powerful, light weight machines that fulfill every requirement for leveling, grading and ditching. Will

dig a V-shaped ditch from 14 inches to 30 inches deep. Flanged wheels. Will not skid. Pivot axle. Frame 30 inches from the ground. Direct lever connection with blade permitting instant operation.

No. 3

Weight, 1300 Pounds
1 or 2 Men, 2 or 4 Horses



The Machine of Real Results.

FREE Write us to-day for catalogue and special good-roads matter **FREE**

GLIDE ROAD MACHINE CO., 509 Huron St., Minneapolis, Minnesota

volume of traffic can be accommodated through general motorized transportation before we will have outgrown in most of our cities the present street layouts and highway movement of merchandise.

In discussing the influence which the motor truck can exercise in effecting traffic reforms, it must be candidly stated that the motor truck *per se* is no cure-all for traffic congestion, or to bring about economies unless it is utilized in a way to take advantage of its latent possibilities. By latent possibilities we mean the greater inherent speed, its immunity from weather conditions, its immunity to fatigue, which means keeping it operating for the maximum possible working hours of the day. If the waiting time of loading and unloading is approximately the same for a motor truck as for a horse vehicle, the waste of the motor truck is decidedly greater than for the horse truck; for the motor truck demands an investment several times larger than the average double-horse team, and fixed and operating charges are very much greater.

We predict that the agitation against traffic congestion cannot take a definite form until we get at the root of the trouble, namely, that the increase of population, increase of business, increased demands for greater celerity of movement of merchandise, and increasing competition in business will force the enactment of legislation in the next ten years aimed to prevent the use of horse vehicles in cities of 100,000 population. By that time the number of motor trucks then in service will have taught the lesson, which custom and habit in using horse vehicles is so difficult to eliminate in the mind of the public to-day, that a motor truck is the only transportation tool in the scheme of advancing civilization that can bring about a

more rapid, more efficient, more convenient, more economical and a more humane method of transporting goods over public highways.

† †

A Lift Bridge

The design illustrated herewith shows a form of movable bridge which has been proposed by the Strauss Bascule Bridge Company for the span to be built across the Chicago River at Michigan Avenue. Chicago, connecting the North and South Side Boulevards. It is of the vertical lift form, having neither cables nor chains, the counterbalancing being effected through levers which form a part of the suspension strusses from which the span and the load it carries are hung.

† †

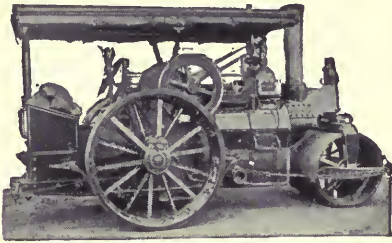
A Sanitary Trash Can

The Climax Refuse Container Company, of 109 Broad street, New York, is marketing a new form of sanitary refuse holder for use by municipalities, schools, hospitals, residences, etc. This container consists of a strong, simple iron frame carrying a heavy ring, part of which is a self-closing spring lid; and a detachable standard garbage can which slides into this frame and on which the ring lid fits automatically, making a tight joint. This automatically closing lid is the great feature of the Climax invention. It is self-regulating and always in action, fitting tightly on the can in whatever position this is in the frame. The spring cover, which closes immediately after the insertion of any waste, prevents flies, roaches, rats, etc., from feeding on the contents of the can, and dogs from pushing the cover off and strewing the garbage about the



A PROPOSED MOVABLE BRIDGE CONNECTING THE NORTH AND SOUTH SIDE BOULEVARDS, CHICAGO

IROQUOIS ROLLERS TANDEM MACADAM



The American Standard for 20 Years

This Company manufactures a complete line of trouble-proof, long-service tools and machinery for street and road building.

Send for Catalogs.

The Barber Asphalt Paving Co.

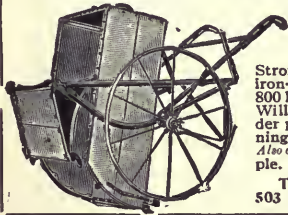
(Iroquois Works)

178 Walden Ave.

BUFFALO, N. Y.

Saves Time and Labor

The Witten goes anywhere—handles any material. You load—it dumps automatically. Can't get out of order. Has many farm uses. Does work of extra man



Witten Automatic Dump Cart

Strong, malleable iron frame—iron-bound wood box. Capacity 800 lbs. 3-ft. wheels, 2-in. rims. Will not cut sod. End gate under perfect control. Light running. Costs little. You need one. Also one horse carts on same principle. Write for free folder NOW!

THE BAKER MFG. CO.
503 Hunter Bldg., Chicago, Ill.

**EVERY AMERICAN
CITY Should Use**

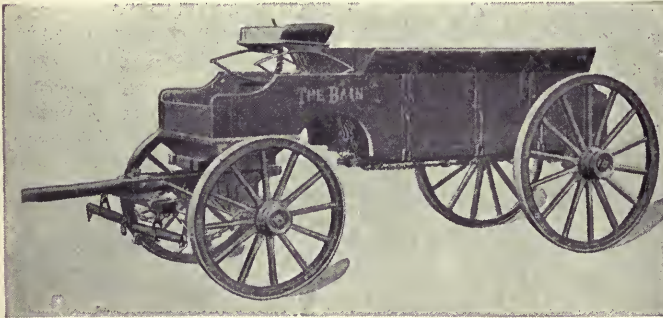
UGITE

*To Insure good,
Permanent Roads*

UGITE has been successfully used on every type of road construction and is prepared in six grades, for hot or cold application, to meet varying conditions or methods of treatment. Our Road Department is at your service for the solution of any problem of road construction and maintenance. Write for explanatory booklets today.

THE UNITED GAS IMPROVEMENT CO.

Road Dept. 102 N. Broad St., Philadelphia



IF you use dump wagons or if you are thinking of buying dump wagons send for illustrated description of the

Bain Dump Wagon

which meets every requirement.

BAIN WAGON CO.

Main and Pearl Sts. KENOSHA, WIS.



THE RELIANCE STREET SWEEPER

Sweeps the cleanest Simplest in construction
Get our special circular

UNIVERSAL ROAD MACHINERY CO., Kingston, N. Y.

1802

DU PONT

1913

Red Cross Dynamite

The World's Leading Explosive
For the Economic Performance of

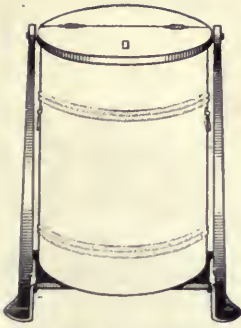
Excavating for Road Construction, Removal of Obstructions in Public Parks, Tree Planting, Rejuvenation of Trees, Subsoil Improvement and Drainage.

*Ask for Handbook of Explosives No. 406
relative to use of Red Cross Dynamite.*

E. I. du Pont de Nemours Powder Company

Established 1802

Wilmington, Delaware

CLIMAX REFUSE
CONTAINER

yard, and renders the can fire-proof, odor-proof and rain-proof. When the can is used for street trash, the cover insures that the paper, litter, etc., once in it, stay in it, and are not blown all over the street by every wind storm, nor does the litter in the can get wet in a rain and become an unsightly mass.

Perhaps the most practical feature of this container is the ease with which it is dumped. The can, though locked in the frame while in use, is lifted out by the garbage collector with a slight jerk and becomes for dumping purposes an actual open can. Very little time is taken by the collector in handling.

+ +

Dahlstrom Appoints Sales Manager

At a recent meeting of the board of directors of the Dahlstrom Metallic Door Company, whose executive offices and factories are at Jamestown, N. Y., James R. Kimball was appointed sales manager, with headquarters at Jamestown. Before his connection with the Dahlstrom organization, Mr. Kimball was associated with the Art Metal Construction Company, also at Jamestown, for more than thirteen years, during which time he filled the positions of district sales manager and special bank salesman. Mr. Kimball has designed and personally supervised the sales of practically all the large bank installations made by the latter concern within the last few years.

+ +

Modern Paving

"It's permanent because it's concrete," is the theme of an attractively illustrated booklet issued by the Dolorway Paving Company of New York. The views have been taken in various parts of the country and show the finished pavement and the process of its application. Many instances of "What Others Say About Dolorway" are given.

+ +

"Everything for the Garden"

The 1913 catalogue of Peter Henderson & Company, of New York, justifies its title. Its illustrations include several colored plates and cover vegetables, flowering and ornamental plants, fruits, garden tools and requisites.

Fertilizers and remedies for insects and fungus are listed, and a list of garden and farm books is given.

+ +

The Weed Problem Solved

The Reade Manufacturing Company of Hoboken, N. J., has issued a little pamphlet

with the above title, which sets forth the claims of "Herbicide" as a weed destroyer. It is a brief, terse presentation, encouraging to read in the midst of spring-time gardening enthusiasm, for "Herbicide" is said to be a sure killer of the very roots of weeds and to be absolutely harmless to metal, stone or woodwork of any kind. A 50-gallon barrel of it may be diluted with 2,000 gallons of water, and this amount will cover from 50,000 to 100,000 square feet of ground.

+ +

New Park Lights in Des Moines

The Commissioners of Des Moines recently placed an order with the Hydro Carbon Company, of Wichita, Kan., for 400 of their Coleman Boulevard Lamps for use in the city parks.

The Coleman Boulevard Lamp is a gasoline pressure lamp of high candlepower. It is said to be brighter than the average electric arc, and will burn large or small mantles according to the amount of light desired. Many of the lamps purchased are intended principally to line the park drives, and these are to be of lower candlepower than those used where a brighter light is wanted. This lamp is usually sold with a 5-gallon tank and automatic cut-off to extinguish it at any given hour, but the Des Moines lamps will be equipped with a smaller tank and filled

each day with just sufficient gasoline to burn the desirable number of hours. It is estimated that midnight service will be secured for about \$6.00 per year per lamp. If this can be accomplished Park Commissioner Zell G. Roe is to be congratulated upon the saving he will make in the cost of park lights. Park watchmen will take care of and light the lamps, so that practically the only expense will be the fuel and supplies required.

The Coleman Boulevard Lamp has been on the market for several years, and is highly recommended by cities which are using it. The post is made of cast iron, the hood is sheet copper, the dome enameled steel, and the burner is of extra heavy brass. It is sent to cities on 30 days' trial and is sold under a positive guarantee to burn in all kinds of weather.

THE COLEMAN
BOULEVARD LAMP

300,000,000 WIRE-CUT-LUG BLOCKS



No. 3074. Buffalo-Glenwood Road. 21 miles long. New York State Highway. Constructed June, 1911. Photo June 8, 1912, at Station No. 369 13 miles from Buffalo City Line.

Watch This List of Licensees Grow

| | | | |
|-------------------------|---|-----------------------------------|--------------------|
| During the year 1910 | { | Corry Brick and Tile Co..... | Corry, Pa. |
| | | United Brick Co..... | Conneaut, Ohio |
| During the year 1911 | { | Kushequa Brick Co. | Kushequa, Pa. |
| | | Sterling Brick Co. | Olean, N.Y. |
| | | Reynoldsville Brick & Tile Co., | Reynoldsville, Pa. |
| | | Danville Brick Co..... | Danville, Ill. |
| | | Paterson Clay Products Co..... | Clearfield, Pa. |
| During 1912 | { | Wabash Clay Co..... | Veedersburg, Ind. |
| | | Clinton Paving Brick Co..... | Clinton, Ind. |
| | | Alton Brick Co..... | Alton, Ill. |
| | | Deckman-Duty Brick Co..... | Cleveland, Ohio |
| | | Tuna Valley Pressed Brick Co..... | Bradford, Pa. |
| | | Foster Paving Block Co..... | Bradford, Pa. |
| | | Metropolitan Paving Brick Co..... | Canton, Ohio |
| | | Bessemer Limestone Co..... | Youngstown, Ohio |
| | | Murphysboro Paving Brick Co., | Murphysboro, Ill. |
| | | Binghamton Paving Block Co... | Binghamton, N. Y. |
| | | Peebles Paving Brick Co..... | Portsmouth, O. |

The combined output of these companies is 300 million blocks annually, or enough to pave a sixteen foot roadway 750 miles long. Hundreds of cities already have admitted Wire-Cut-Lug Block in their specifications and the number of city engineers recognizing their merit is growing. See that your specifications are right. Wire-Cut-Lug Block never have been rejected where submitted. Write us for further evidence.]

THE DUNN WIRE-CUT-LUG BRICK CO.

CONNEAUT, OHIO

PATENTED IN THE UNITED STATES AND FOREIGN COUNTRIES

Efficiency in Fire Apparatus

To the Editor of THE AMERICAN CITY:

I do not believe that it is the right time for the manufacturers to talk about the amount of money saved in the maintenance of motor fire apparatus as against the maintenance of horse-drawn apparatus. I believe this is a matter that should be commented on by the users of the machine—the chief of the fire department.

I also believe that the enthusiasm that has been shown in many of the different departments will die out unless the manufacturers who are furnishing the apparatus to the trade *design for the purpose*. The fire chiefs are going to find that they cannot afford to recommend to their purchasing departments the motor fire apparatus that costs from \$8,000 to \$9,000 and as high as \$10,000 a machine, and have these machines show a depreciation in efficiency of 30 and 40 per cent in the short period of two or three years—as are the records to-day in several cities.

This company has given the motor fire apparatus very thorough consideration, and we are looking ahead to the time when every successful manufacturer will have to design his motor fire apparatus for fire-department use exclusively, just as was done in the building of the old-time-ried steam fire engine.

There is no reason why a gasoline pumping engine should not last from ten to fifteen years and maintain at least 90 to 95 per cent of its original efficiency if designed and made for the fire department and properly taken care of by the fire department when a steam fire engine will last from twenty to thirty years and maintain its efficiency when properly cared for.

We believe that within the next three or four years the majority of apparatus now in service will substantiate this letter.

E. A. WILKINSON,

General Manager Nott Fire Engine Co.

✦ ✦

Union Metal Lamp Standards

The catalogue which bears this title comes from the Union Metal Manufacturing Company of Canton, Ohio, and contains many illustrations, with specifications, of electric lighting standards of various dignified designs for different uses. Designs for one- and four-arm wall brackets are also shown. A sectional drawing makes clear the construction of these metal standards. The high-grade, open-hearth steel used in the shaft is rolled for this special purpose, and is heavily coated with the best quality of spelter, and all surfaces are thoroughly painted. The shafts are built up of two-ply of this material, lock-seamed, fluted and pressed firmly together without solder, rivets or welding. This pressed steel shaft is said to be exceedingly tough and strong. It may be beautified and enriched by being covered with cold-rolled sheet copper and finished in natural copper, verd antique, oxidized or statuary bronze, with the base and top painted to match or cast in bronze. The joints and anchoring are firm and strong, and will absorb shock to a certain extent, thereby prolonging

the life of the glass globes, lamps and the delicate electrical equipment.

✦ ✦

Removal Notice

The New York office of the Electric Railway Equipment Company was removed on May 1 to the Hudson Terminal Building, 30 Church Street.

✦ ✦

Chief Loller Honored

"Presented to William H. Loller from the citizens of Youngstown in appreciation of his long and faithful service." This is a portion of the inscription on the diamond-studded gold badge which was presented to Chief Loller on April 16 in recognition of his 26 years as head of the fire department of Youngstown, Ohio. Mr. Loller has accepted the position of general sales agent for the fire equipment department of the Republic Rubber Company of Youngstown.

✦ ✦

"Clean Up and Paint Up"

This is the slogan of the campaign which has been started by Allen W. Clark, editor of the *American Paint and Oil Dealer*, and which is receiving enthusiastic support from civic societies, city and State officials, editors of local and general journals, as well as those engaged in the paint trade. There are sanitary and social and economic reasons why this campaign should appeal to every citizen and become a regular spring and fall undertaking. Plans and suggestions may be obtained by writing to the "Clean-Up and Paint-Up" Campaign Bureau, 411 North Tenth Street, St. Louis, Mo.

The *National Hardware Bulletin* says: "While painting is mentioned prominently in connection with this 'Clean-Up' idea, it is designed to be only a part of the general movement—but it is an important part. Paint fills the minute cracks in exterior and interior woodwork, removing the hiding and breeding places of myriads of bacteria of contagious and infectious diseases, forcing them to face the pure air and sunlight, two of their relentless enemies. Painting is a long step towards better public health. It is said to pay for itself at least three times more than it costs; in other words, it costs only one-third as much as repairs. Woodwork, if kept painted, is practically indestructible so far as decay is concerned. Yet it is said that not over 25 per cent of the houses in the United States are painted, and this needless loss to property-owners must reach enormous proportions every year."

PLANT FOR SALE

- 1—50 H.P. Fairbanks, Morse gas producer.
- 1—43 H.P. Fairbanks, Morse 2-cyl. vert. gas engine.
- 1—36 K.V.A. E. M. Co. 2300-volt, 60-cycle, 3-phase, rev. field alternator.
- 1—1½ K.W. G. E. Co. exciter.
- 1—Two-circuit Westinghouse switchboard.
- Air compressor, blower, small gasoline engine, cir. pump, air and water tanks, all piping, etc., complete plant equipment. Used about two years, in excellent condition, giving splendid service. Will still be in operation for about sixty days. WINDHAM ELECTRIC CO., Windham, O.



West 14th Street, Cleveland, Ohio. Laid 1906.

BRICK—The Permanent Pavement

¶ Brick streets and roads laid according to the specifications of the National Paving Brick Manufacturers' Association provide an unsurpassed surface for all classes of traffic. Not merely a good surface for a season or two, but for a generation.

¶ Properly constructed brick pavement is permanent. It insures satisfactory results.

¶ Our No. 1 Directions for the Construction of Vitrified Brick Pavements tell how to attain such results. We do not monopolize by secret processes—no royalty—no patent.

¶ Specifications and any other information desired regarding brick roads and streets sent on request.

NATIONAL PAVING BRICK MFRS. ASSOCIATION
ENGINEERS BUILDING

WILL P. BLAIR, Sec'y.

CLEVELAND, OHIO

APPLIANCES FOR CONTRACTORS AND BOARDS OF PUBLIC WORKS

Applying Road Binders

The Climax Distributor, manufactured by the Good Roads Machinery Company, of Kennett Square, Pa., is designed for applying bituminous binders at a high temperature and under any desired pressure rapidly and economically. It consists of an air-tight 150-gallon asphalt drum, equipped with two sets of distributing valves and nozzles, a heating device, an air reservoir and a Westinghouse air compressor, all mounted on a heavy frame, which is supported by four broad rolls and a folding trailer wheel. The machine and its operations are fully described in the company's catalogue of "Machinery for Applying Dust Layers and Bituminous Binders." The design secures simplicity of action, thus eliminating all trouble and unnecessary labor of operation. The makers guarantee the machine to handle Bermudez and Trinidad successfully in quantities of from $\frac{1}{3}$ to $1\frac{1}{2}$ gallons under any reasonable pressure. Experience has shown that it will easily spread a mile of 16-foot roadway in a day.

The Country Roadway

A paper on "Development of the Modern Country Roadway," by George C. Warren, appeared in the January number of *The Journal of the American Society of Engineering Contractors*. It discusses the country roadway as distinguished from the city pavement, and outlines its development from the period of the pioneer work of John MacAdam. The article occupies 62 pages and is illustrated with views of road work and with portraits of some of the leaders in the good roads movement.

✦ ✦

Selling Road Rollers

The Frick Company, of Waynesboro, Pa., which has not heretofore handled gasoline tractors, has recently contracted with the Ohio Tractor Manufacturing Company of Marion, Ohio, for the sale of their goods throughout the East and Southeast, and through their strong selling organization cover the territory wherein the Ohio Tractor Manufacturing Company heretofore has not been represented.



THE CLIMAX DISTRIBUTOR AT WORK

BRICK

The Permanent Pavement

Following will be found
a Directory of some of
the well-known Manu-
facturers of Paving Brick
and Block.

Alton Brick Company

Repressed Block and Dunn Wire-Cut-Lug Block
ALTON, ILL.



Bessemer Limestone Company YOUNGSTOWN, OHIO

*Repressed Bessemer Block and
Dunn Wire-Cut-Lug Blocks*

BIG FOUR CLAY COMPANY

CITY NATIONAL BANK BLDG.
CANTON, OHIO



BINGHAMTON PAVING BLOCK CO.

BINGHAMTON, N. Y.

MANUFACTURERS OF THE FOSTER BLOCK

Made Under the DUNN WIRE-CUT LUG LICENSE

WORKS: BINGHAMTON, N. Y.

OFFICE: BRADFORD, PA.

CLEARFIELD BRICK MANUFACTURING CO.

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LARGE CAPACITY

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Office: Engineer's Building
CLEVELAND, O.



This company puts out a 2-cylinder, 30-horsepower, 10-ton kerosene road roller, 6 feet 6 inches in width, with crowning wheels; a machine that can be changed from tractor to roller. This makes a combination that seems likely to be popular among road builders.

† †

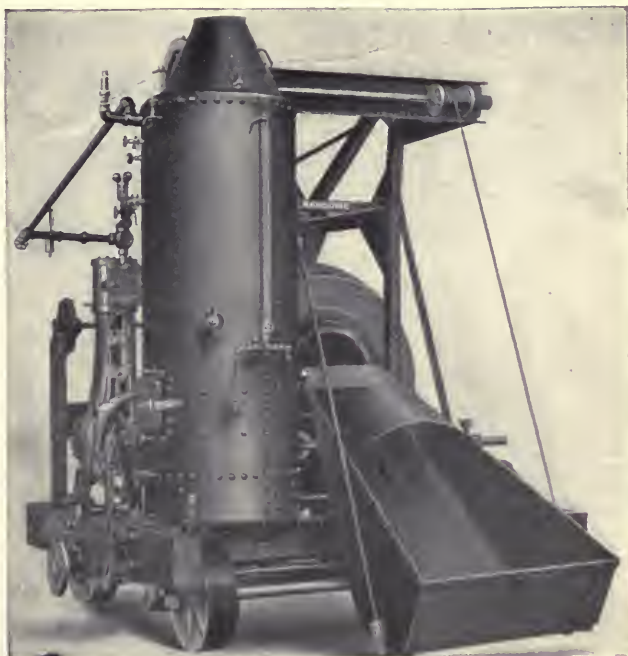
"From Sand Pile to Forms"

The Ransome Concrete Machinery Company, of Dunellen, N. J., has been identified with concrete since the beginning of the industry. Since the use of Ransome concrete machinery on the first two reinforced concrete factory jobs in the world, the line has been steadily developed to meet modern conditions of handling concrete materials. The company's three-fold experience as engineers, contractors and manufacturers puts it in the position of being able to design a concrete plant of high economy. The Ransome mixer has been improved since the first design, but the principle has remained the same; that is, the mixing is a combination of rolling and rubbing contact. The accessory Ransome machinery is briefly described and illustrated in the company's Catalogue No. 13. Various types of street mixers are shown, adapted to economical and efficient work on street-paving and road-building jobs.

† †

Road Builders' and Roofers' Equipment

A clear and useful set of illustrations of roadbuilders' and roofers' equipment, briefly and concisely described, is contained in Catalogue No. 20 of the Union Iron Works, Hoboken, N. J. It shows portable asphalt and tar-heating kettles, combination tar and gravel heaters, roofers' kettles and other equipment, pipe line supplies, etc. The "Union Portable Heater," shown in one of the cuts, is intended for long hauls and short jobs. As the tar can be heated while being hauled to the work, this will be found a desirable outfit in places where the municipal authorities will not allow a thoroughfare to be blocked by a stationary kettle. The truck can be furnished with either shaft or pole. The construction is strong and durable throughout. The space back of the



RANSOME CONCRETE MIXER NO. 60

driver's seat is arranged with a wood rack, which will hold two days' supply, and there is also a rack for carrying pails, dippers, mops, etc. A tool box can be provided when desired.

† †

Motor Truck Sprinkler

The illustration of the Etnyre motor truck street sprinkler and flushing machine presented on page 524 of this issue, shows the sprinkler covering 60 feet from curb to curb. This can be regulated to cover any distance from 5 feet to 80 feet, and the volume can be regulated to cover the speed of the machine. The sprinkler can be furnished without the flushing attachments if desired, and the valves are in either perforated or slot type and throw water either vertically or horizontally. The catalogue of motor-truck and horse-drawn sprinklers and flushers from which this view is taken is issued by E. D. Etnyre & Co., Oregon, Ill., and is worth obtaining. Another of its illustrations shows the Etnyre motor-truck flusher with nozzle turned at an angle for sprinkling lawns and parkways, and covering 50 feet.

STATEMENT OF OWNERSHIP, MANAGEMENT, ETC.

of THE AMERICAN CITY, published monthly at New York, N. Y., as required by act of Congress of August 24, 1912:

Editor—Harold S. Buttenheim, 93 Nassau Street, New York.

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Herbert K. Saxe, 93 Nassau Street, New York.

Known bondholders, mortgagees or other security holders: None.

(Signed) EDGAR J. BUTTENHEIM, Business Manager.

Sworn to and subscribed before me this first day of

April, 1913.

Notary Public, Kings County, No. 50. Commission expires March 30, 1914.

J. R. FRITH,

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MADE"



DECKMAN-DUTY BRICK CO.

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"Medal" Paving Block
CLEVELAND, O.

GLEN-GERY SHALE BRICK CO.

READING, PENNSYLVANIA

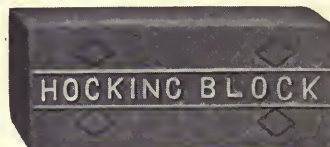


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VOLUME VIII

NUMBER 6

The American City

NEW YORK

JUNE, 1913

Editorial Comment

The Persistence of the Speculative Spirit

Civilize ourselves as we may, it is difficult to overcome the primitive gambling instinct. To this, more than to any other one cause, is due the opposition of most landowners to any effective legislation for limiting building heights or restricting building areas. The purchaser of land in a growing city hopes that some day his property may be selected as the site of a 50-story skyscraper. He, therefore, opposes any ordinance which would make the erection of such a structure impossible. In so doing he forgets, however, that no city can be made up wholly or chiefly of tall buildings, and that sky-scraper land values on a few favored thoroughfares mean an unfair depression of values on many other streets.

The altitude attained by land prices in New York City is a subject of frequent comment; but the contrasts in values found even in the lower end of Manhattan Island are not so generally known. In an address before the National Conference on City Planning, in Chicago last month, some illuminating figures were quoted by Lawson Purdy, President of the Department of Taxes and Assessments of New York City. Most striking, perhaps, was the fact that a certain lot measuring 25 by 100 feet had been sold at \$1,250,000, with lots of equal size not more than 1,000 feet distant offered for sale at \$25,000. Proper building regulations would have made the \$1,250,000 price impossible; but would they not also have increased the value of all of the \$25,000 lots? From the point of view of enlightened sel-

fishness, the great majority of landowners in any city might well favor such a restriction of building heights and areas as is suggested in the following resolution introduced by Mr. Purdy at the Chicago meeting and referred by the Conference to its Executive Committee:

Whereas, The rights of landowners are frequently infringed, and the value of land and buildings impaired by the erection of buildings of excessive height or otherwise unsuitable; and

Whereas, The erection of such buildings is often forced upon landowners by the absence of such regulations as will adequately conserve their right to proper light, air and access; therefore be it

Resolved, That regulations governing the construction of buildings should be framed upon the principle that no man should so use his land as to injure his neighbor; that, subject to the limitations imposed by existing conditions due to previous lack of regulation, the construction of buildings should be so regulated in respect to their height and area that any section of the city might be completely covered with buildings of the maximum height and area permitted in such section without impairing the enjoyment of such light, air and access by all of them as may be necessary for the most profitable use of the entire section.

It is recognized that the regulation of building heights in New York City is a problem of peculiar complexity; and the report of the commission recently appointed by the city to investigate the entire problem will, therefore, be awaited with much interest. That some few American cities have already restricted building heights may be taken as indicating a determination not to emulate New York's needless congestion; and it is to be hoped that the thorough study of the question now under way in the

metropolis may result in action beneficial in its effect and widespread in its influence.

It should be borne in mind that intelligent building codes do not necessarily involve a monotonous sky line. The tower building may be made possible by making restrictions of height dependent on the width of the street and the percentage of the lot occupied. Not high structures *per se*, but inadequate aid and access, the needless use of artificial light, and congestion of transportation and traffic are the evils which such regulation should eliminate or minimize.



The Fundamental Right to Leisure

Not only to promote wholesome use of leisure, but to help secure leisure—for child-laborers, working-women and all overburdened toilers—is an appropriate function of the recreation movement. So said Mary E. McDowell, of the University of Chicago Settlement, at the playground congress held in Richmond, Va., last month by the Playground and Recreation Association of America.

In speaking for the right to leisure, Miss McDowell placed emphasis on a fundamental frequently overlooked in present-day efforts to encourage the right use of play-time; for too often those whom we would teach to play properly have no time or ambition to play at all. Though a summer vacation and a Saturday half-holiday are the privilege of most salaried employees, a rest of even one day in seven has not yet been won by many thousands of manual workers; and even where hours of work have been shortened, the gain to the worker is often more apparent than real. To quote Miss McDowell:

"To the overworked factory hand there is little comfort in the historic fact that the hours of work to-day are less than they were fifty or a hundred years ago, for the workers know that the overstrain and the speeding up have been increased from year to year.

"Until the states realize that the workers are determined upon a shorter work-day as a protection against the increased speed of the machines, we shall have strikes and discontent from the organizations that demand this right. A girl running a machine that makes 4,400 stitches a minute, whose eyes must watch the lightning speed of these many needles, must be protected. A young girl of eighteen, at the close of a week of ten hours' work each day at an uncongenial occupation, is desperate

when Saturday night comes, and protests in the reckless manner of youth when she answers her older friend, 'When Saturday night comes I'm so tired I don't care a damn where I go.' Another explained, 'I was so tired I just went along with him.' It is recklessness and weariness that are as dangerous to the morals of young women as are small wages."

It was also shown by Miss McDowell how deadening is the effect on the normal play spirit, natural to all young creatures, of mechanical work done by boys and girls under 16 years of age.

"The spirit of play that keeps human beings young is very early atrophied in the specialized labor of this day. The young working people of my acquaintance who left school between 14 to 16 years of age do not know how to play. The spontaneous nature of youth expresses itself in animal play, but the spirit seems to be benumbed. They dance—yes, but without rhythm; they laugh—but without the ring of joy and youthful music. Even the clubs of young Americans who work in offices or telephone exchanges, who know only the office life, are totally lacking in power of initiative; they are passive in their amusements. Dancing or sitting before the moving pictures seems their only recreative resource.

"We who believe in the divinity of the play spirit will have to secure more leisure for all who labor, and protect the adolescent boys and girls in the unnatural place they now have in the industrial world. Eliminate those under 16 years from the factory, give a short work-day to all, and develop the power of initiative and resource, then we may be able to keep alive the power of play as a spiritual gift."

But adequate leisure and the physical and mental ability to enjoy it are not self-sufficient. Community efforts must also be directed towards the providing of proper places and trained supervision for public recreation. "Children," quoted Joseph Lee at the Richmond congress, "inherit the play spirit, but they don't inherit specific games any more than they inherit the Lord's Prayer." There must be teaching, leadership and encouragement for game-playing. These the outdoor playground, the recreation house and the public school social center are supplying in increasing measure in many American cities and towns. The whole movement is one of the most hopeful of present-day tendencies in community betterment; and to the members and supporters of the Playground and Recreation Association of America belongs no small share of the credit for its inspiration and practical guidance.

How the Parks and Boulevards of Kansas City Are Financed*



A Practical Application of the Land-Tax Method in Assessing
for Street Improvements and for the Establishment and
Maintenance of a Park System



By George E. Kessler

Fellow, American Society of Landscape Architects, St. Louis, Mo.

ALL lands in Kansas City, Mo., are, of course, assessable for general taxation for state, city and school purposes, these several items of general tax supplying the means of conducting the several general governments and providing for the ordinary functions of each. Out of general revenues only very little of street improvement is made, and out of general revenue or bond issues, based on general taxation, are constructed the principal trunk line sewers. All else is done in the form of special assessment against benefited land. In the case of special assessment for particular improvements, these assessments lie against the lands only, in no case taking the improvements thereon into account.

When a street or any public highway, inclusive of the boulevards, is to be established, the administrative boards and the legislative body adopt the necessary resolutions or ordinances, and inasmuch as general funds are rarely available for this purpose, proceed in the local civil courts to appropriate or condemn the land necessary to establish, widen, or extend these highways. The cost of the lands entailed in such procedure is then, in the same court, by the same commissioners establishing the value of the lands taken, assessed against the private lands within a previously prescribed contiguous or abutting benefit district. In the case of streets, usually the abutting lands only are assessed; in the case of boulevards custom has established the frontage upon the adjoining parallel street on each side as properly within a district specifically benefited by the establishment of such highways. Later, after the properties have been acquired, or sometimes at the time of acquisition, the grades upon which these highways are to be built are established;

and should there be violent changes of ground surface, thereby producing possible injury to the abutting private property, opportunity is given to claim damages for this element, and the cost thereof is assessed in the form of special land assessment against the properties in the benefit district.

Subsequent to the disposition of the question of damages due to the street grade or changes in ground surface thereon, the highway is graded to its established grade and the cost of this work assessed in proportion to the value of the property assessed and against the lands forming the normal frontage on the highway so improved. After the street has been brought to the proper planes in accordance with the established grades, and all subsequent to the proper legislation by both the administrative and legislative bodies, the city proceeds to improve these highways by first establishing the necessary drains, discharging these into the established sewer system or creating new sewer districts. The cost of such drainage is assessed against the lands within the area to be drained, on the basis of cost in proportion to its area.

The city then further proceeds to build the curbs, the street pavements, the sidewalk pavements, and assess all of these elements against the abutting properties.

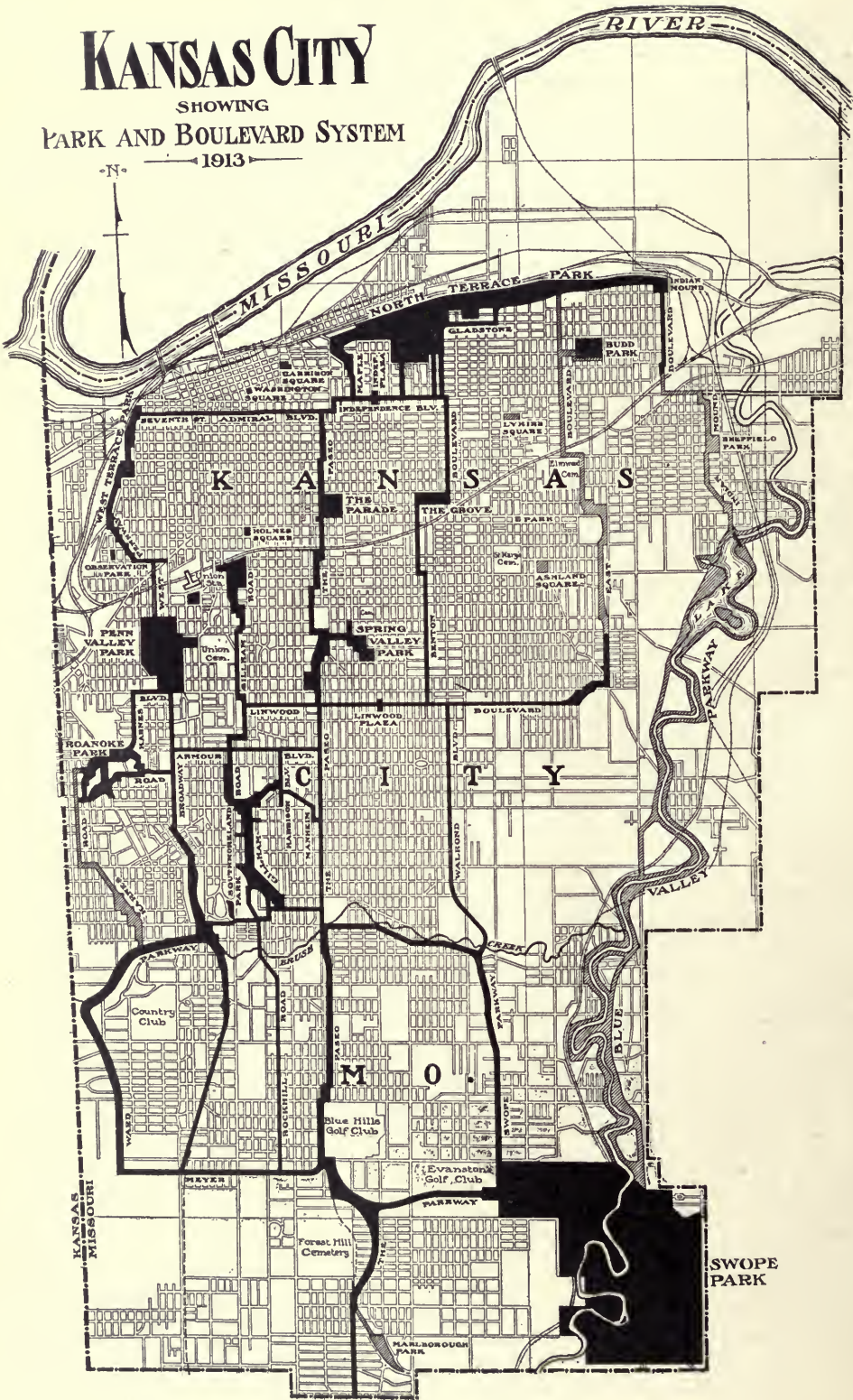
The city may—but does not, as a rule—further assess the abutting properties with the cost of establishing the lawns on the sidewalk spaces, but does assess the cost of shade-tree planting and care upon the abutting property in the case of the streets. In the case of the boulevards, the Park Commission, out of its funds, provides for the cost of tree planting and the lawns on the sidewalk spaces.

The city does not assess for the establishment of water mains, and the installation of lighting equipment is an incident to the gen-

* From a paper read at the Fifth National Conference on City Planning, at Chicago, May, 1913.

KANSAS CITY

SHOWING
PARK AND BOULEVARD SYSTEM
1913





CLIFF IN NORTH TERRACE PARK AS IT WAS



CLIFF DRIVE IN NORTH TERRACE PARK

eral contract for lighting paid for out of the general revenue.

What the Park and Boulevard System Has Cost

The park and boulevard system is administered by a Board of Park Commissioners, one of several administrative boards, and charged with the particular duty of creating and maintaining this system. It has the exclusive power of selection, no powers of legislation, but exclusive powers of administration.

Beginning twenty years ago to plan, under the writer's direction, for a comprehensive scheme of this class of improvement, actual acquisitions were not accomplished until approximately 1896. Since that time to the middle of April, 1913, the close of the fiscal year, the following general expenditures have been made on this system:

SPECIAL ASSESSMENT

| | |
|---|-------------------|
| Acquisition by condemnation. (All purchases having been made through exercise of the power of eminent domain) | \$6,115,187 |
| Boulevard improvement by tax bills | 1,412,473 |
| Boulevard grading damages | 24,723 |
| Park district maintenance | 1,863,906 |
| Boulevard maintenance | 78,730 |
| Miscellaneous collections (accruing through special assessments) | 120,000 |
| | <hr/> \$9,615,019 |

GENERAL TAXATION

| | |
|---|-----------------|
| Bond issue | \$500,000 |
| Apportionment from annual municipal revenue | 1,353,000 |
| Vehicle tax | 147,874 |
| Miscellaneous collections accruing through general taxation | 64,009 |
| | <hr/> 2,064,883 |
| Aggregating | \$11,679,902 |
| Special assessment | 82.3% |
| General tax | 17.7 |
| | <hr/> 100% |

To understand, perhaps, more clearly the general scheme of administration and financing, it should be understood that Kansas City, Mo., now a community of some 275,000 people, is east of the line dividing Missouri from Kansas. In Kansas City on the Kansas side, there is a population of some 100,000 in addition. Kansas City, Mo., and the city of St. Louis are the two constitutional cities of the state, each having its own charter and each having the exclusive power of charter amendment with reference to local affairs and the administration of local laws. Therefore, the city of Kansas City, Mo., is alone responsible for the successful work there accomplished. Among other administrative boards, the Board of Park Commissioners has exclusive

charge of its park and boulevard operations.

The Park Department had no hope of aid from current revenue, and the debt-making power had reached its limit in the purchase of the water works. There remained only reliance upon private generosity or special land assessment. In applying, therefore, the principle of benefit assessments for the creation, improvement and maintenance of this park system, there were established certain assessment districts used as units of taxation, within each of which the private lands were directly assessed, presumably in proportion to the benefits derived by these through the purchase of land required for the several public improvements.

If a park or parkway—defining the latter as a parked highway—was sought to be purchased, then, after the proper legislation had been adopted, the circuit courts and commissioners under the judges of the local civil courts found the values in detail and in aggregate of the properties taken under such procedure. They then distributed, in accordance with their judgment, the cost of this acquisition against the private lands within the park district in which the park was to be located. Such assessments become liens against the private lands, subject to sale in the event of failure to pay at given times. Where the assessments were likely to be large, opportunity was given to pay the individual assessments in instalment periods, usually of twenty years. At no time has the community at large been required to pay any portion of these purchase costs.

In case of the boulevards there was practically the same procedure, and, while under a different administrative board, the streets were also established in the same manner, except that in the latter case no instalment payment periods were permitted.

Annual Assessments for Maintenance in Each Park District

For the purpose of improving and maintaining these parks and boulevards, and in the absence of sufficient current revenue appropriated by the legislative body, there was established a power to assess annually within the limits of each park district and for the sole benefit of that park district every parcel of private land within that district, at the same time and to the same effect as the same lands were charged with



THE PASEO AT TENTH STREET, BEFORE THE TRANSFORMATION



THE MEYER MONUMENT ON THE PASEO AT TENTH STREET

the annual ordinary taxation, but in addition to and beyond the constitutional limit for general purposes. The creation of this annual revenue is the real benefit of the division into permanently established park districts.

It was found desirable, in addition to the district maintenance funds, to assess annually, also in the form of special assessment, a low maximum charge against the abutting private properties upon boulevards and parkways for the exclusive purpose of maintenance work upon the boulevards or parkways along which these assessments were made. Inasmuch as a low limit was

older park districts naturally contain the high-valued business areas, and, therefore, obtain ample revenues for improvement and maintenance within their limits. The outlying and intermediate districts, having comparatively low values, obtain insufficient funds to properly improve and maintain the lands and the highways within their limits. Therefore, there must each year be obtained from current general revenues a sufficient apportionment to the Park Department for the expenditures necessary in these districts beyond their local district revenues. This becomes particularly true of the great outlying park, the entire cost of improvement



ARMOUR BOULEVARD AT HARRISON BOULEVARD, KANSAS CITY

finally placed upon the powers of the city to make the annual maintenance levies, the Park Department was given, for the benefit of its park districts, all of the vehicle licenses collected by the city. This in turn is apportioned in accordance with the annual revenues or the established valuation of the lands within the several districts.

One difficulty of the annual park district maintenance levy is that the actual revenue then depends upon the assessed valuation of the lands within these districts. In Kansas City this is approximately 50 per cent of the actual values of the properties. The

and maintenance of which must necessarily be borne out of the municipality's current revenues.

In effect this has placed the Park Department in Kansas City in a semi-independent condition with reference to its funds, and has made it possible to accomplish results that would have been entirely out of the question under any other financial system.

In practice this entire procedure is an amplification of the theory of single land tax. It certainly was not accomplished as a matter of choice but as a matter of necessity, and inasmuch as no properties had been

acquired under any other system, the tax-paying public finally acquiesced, and is constantly urging further and even more extensive development in order that the entire city may obtain commensurate benefits through improvement in every section. While it undoubtedly has become a serious burden upon the private lands of the entire community, yet these burdens have been equably distributed; and since all lands con-

tribute, there has been no reasonable objection. Its distinctive advantage in that city has been a resultant stability of land values reaching very far beyond the values for residential purposes alone. It has also very strongly tended toward proper segregation in the several sections of the city of property for industrial, commercial and residential use, and has made possible what otherwise would not have been accomplished.

The Organization and Functions of a City Planning Commission*

By Hon. William A. Magee

Mayor of Pittsburgh, Pa.

THE organizing of a body burdened with the almost boundless ambitions, within the cramped quarters and with the feeble authority which a review of city planning discloses, may be undertaken with some mental reservations. How shall it be created, how constituted, what shall the number of its members be, and how large a professional force does it need?

It must have the respect and become essentially a part of the bureaucracy, and, therefore, should receive its appointment from the executive; since it must have the respect of the public service corporations, of the voluntary societies, and of the authorities of neighboring communities, it should receive its powers from the legislature. Public opinion must be moved to cause the enactment of laws; therefore, the membership should be composed of citizens of influence. The number of commissioners and the subordinate force employed need not be large, at least the latter need not be great at the first. Although the commission in the main will be composed of laymen, a member trained in civil engineering and one learned in the law would be of great value. It should be needless to say, because apparent, that the general effectiveness of the body will be proportionate to the degree of interest, of intelligence and of tact displayed by its membership.

Now what is the first step to take? I

should say to obtain the aid of a professional adviser, then survey the whole situation, catalogue all the elements involved, the public officials, the corporate officials, the civic societies, the municipal finances and the required legal powers. After this survey is completed, certain forces must be set in motion to lay the ground for the exercise of the functions of the commission on a broad scale. The first aid to the commission from any and every viewpoint will be the public and personal interest aroused in its favor; therefore it would seem highly advisable to carry on a well-organized and directed campaign of what is called publicity. Unless the economics of city planning are well developed in its early stages, the plans will die aborning; therefore as rapidly as possible the enactment of law should be procured containing the principle of local assessment, public ownership, of the use of the municipal credit in the construction of public works and self-supporting public utilities. Lastly, at the proper stage of development, the commission must obtain the kind of veto power which will compel the most careful consideration, if not the actual rejection, of all plans and designs that may conflict with its ideas.

Existing Agencies Should Be Utilized

Now what is the function of the city planning commission? How does it fit into the existing organized administrative agencies, official and otherwise? What

* From an address before the Fifth National Conference on City Planning, Chicago, May, 1913.

shall it do, what acts shall it perform, and how? It certainly seems clear that it should not attempt to abstract from or encroach upon the prerogatives of any authority already established. The very scope of city planning negatives such a conception of the office of the commission. Rather than dismiss or demote any of the existing agencies, enough gaps are apparent to justify the organization of still more workers. All these public and corporation officers, all these altruistic citizens and societies, are already and for a long time have been planning after a fashion. The city planning commission has been called into being because they have not planned largely enough, comprehensively enough, wisely enough. They lack the vision which the commission is to supply, the influence to obtain a hearing which the commission must bring, and the authority to employ an adequate force of capable assistants often necessary which the commission must obtain for them; but they must become the principal tools with which it will do its work.

There are four or five different classes of persons constituting the mechanism engaged in public administration. If the city planning commission will assume the initiative, assign to each one the preparation of his appropriate share of the city plan, the larger part of its preliminary work, at least in volume, will be cared for. The street department would be willing to address itself to perfecting a comprehensive thoroughfare system; other divisions of the government would prepare a park and boulevard scheme, a complete sewer system, etc. No doubt the growth of the city and the constant shifting of the population have resulted in an uneconomical and illogical distribution of the public schools, of the police and fire stations. The departments of water supply and highways have a number of subsidiary centers that in all probability have been not only outgrown long since, but badly located as well with reference to distance, topography and thoroughfares. All these must be located and relocated with reference to each other on a comprehensive basis, so that not only will each be a perfected unit of itself but that each will support the other as far as desirable.

The officers in charge of these matters are presumably men of capacity and experience, with some personal pride as well as considerable official ambition. Who else

is as well equipped to suggest, in a preliminary sense at least, the necessary changes and reforms? It is true they now lack the larger view that is to be supplied by the commission. There must be consultation; and this attention to distant and ulterior considerations can be easily aroused. It is my opinion, once interest is aroused in this fascinating subject, all of these subordinate officials will develop into city planners. They will begin to find the time they now seem to be without, even though it must be out of office hours.

One of the chief functions of the commission is to bridge the gap existing between independent public authorities. Public policy has been careful to devise an elaborate system of checks and balances, but until now no attempt has ever been made to answer the crying need for a unifying force. We have stood off at arms' length too long. As between the city officers themselves, the commission should by reason of their common association around the same executive be in position to induce collaboration with a degree of ease, but its task is harder with reference to the managers of public service corporations, and more still with the suburban authorities.

A Municipal Utilities Bureau

As to the public utilities, the planning commission must first be backed with some legal power to call upon and direct the attention of their managers to those of their activities which have city planning aspects. We have a hint of the persuasive authority of a statutory introduction of public officers to great corporations in the Erdman law enacted by Congress for the purpose of mediation in labor disputes. Our planning commission should be empowered, therefore, to suggest, to consult and advise with corporate managers as to their improvements. And, indeed, the same is true as to other public officers and even private citizens. It is no infringement upon their rights, and doubtless many would welcome it. The councilmen or aldermen, too, should be eager to support the commission when it takes a stand. Both the moral authority and the regulatory powers of the city legislature are great. The municipality is handicapped in dealing with these corporations generally by the lack of an appropriate administrative organ. Every city should have a public utilities bureau com-

posed of an official who would be conversant with and represent the side of the city in the many matters arising regarding the public utilities. The questions of enlargement and extensions have been handled by the utility companies in much the same short-sighted fashion as similar matters have been dealt with by the city. Such an officer under the guidance of the commission would become a city planner. He would be an invaluable agent in the public service matters with which it is concerned.

Relations with Suburban Officials and Civic Bodies

The planning commission will have difficulty in establishing relations with the suburban officers. The latter are suspicious of annexation and, besides, possess inferior financial resources. The solution of this situation seems to lie in the metropolitan district, although it is not an easy accomplishment. In the meantime, representation in the membership of the commission may,

to a considerable extent, open the door to cooperation.

The commission should assume the same attitude to the civic organizations that it does to the public officers. These outside bodies can be stimulated to a sufficient degree of interest to do their planning according to true principles, and they will constitute the chief force in arousing the intelligence of the community to action. There should be at least one organized body at work upon every phase of the municipal problem, sometimes an official, occasionally an employed expert and often a volunteer organization. No specific suggestion can be conveyed to cover many cases. No two localities are alike and circumstances must govern, but it seems plain that it is the duty of the planning commission to take the initiative where no other body has. The commission had better assume direct control but rarely. It must oversee and supervise too many others. It must attack the problem from every standpoint, from all sides.

Plans for the Development of a Tract on the Outskirts of a Growing City

AN important feature of last month's meeting of the National Conference on City Planning at Chicago was the report of the Committee on a Study in City Planning. Nine sets of plans had been received by the committee, all of the participants having had the same data on which to work.

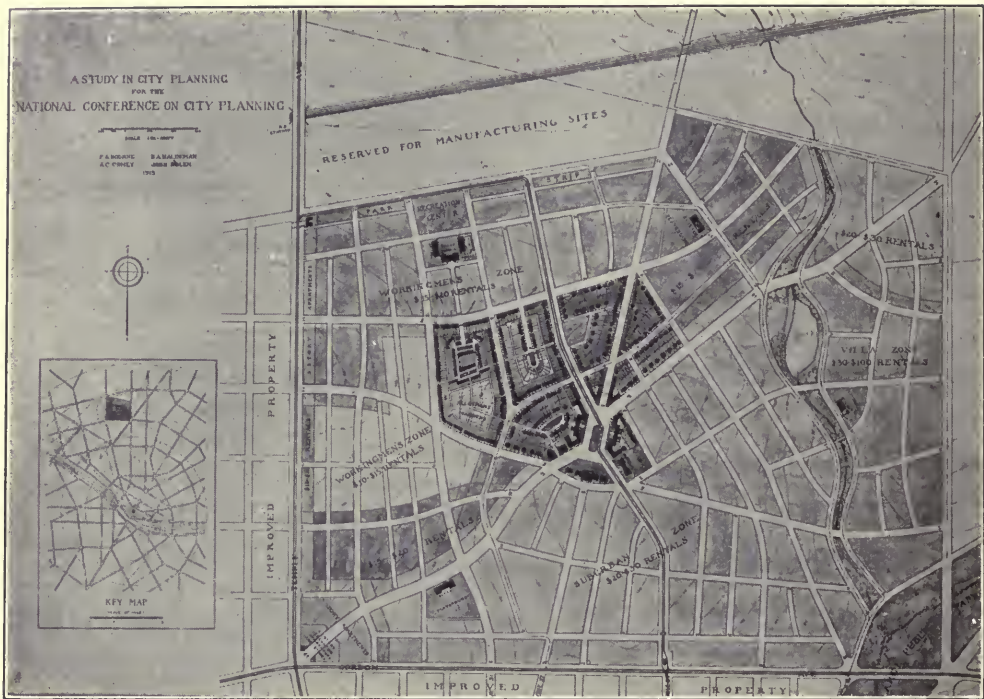
The area to be developed was a hypothetical tract of 481 acres, assumed to be located about four miles from the center of a growing city of about 500,000 inhabitants. The land was supposed to cost \$2,500 per acre, the demand to be mainly for the erection of dwellings, retail stores, local purposes of amusement, schools, churches, etc. Approximately half of the population was assumed to be dependent on work in nearby factories, and at wages requiring most of the dwellings to be commercially rentable at from \$15 to \$30 per month.

Four of the nine general plans submitted in the study are reproduced on the following pages. The other participants were A. F. Brinckerhoff, of New York; Stephen Child, of Santa Barbara, Cal.; I. J. Mc-

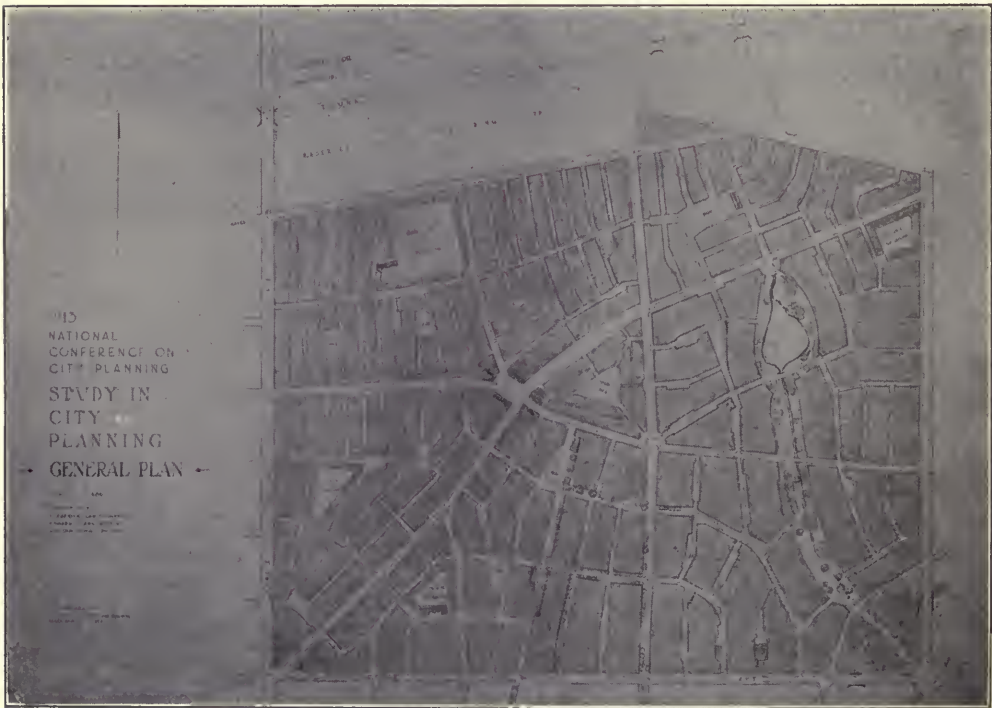
Crary, of Harvard University; F. L. Mulford and Bedford Brown, of Washington, D. C.; and Morell & Nichols, of Minneapolis.

The committee's report, signed by John Nolen, chairman, which has been published in a special City Planning Supplement by *Landscape Architecture*, contains much detailed information regarding the nine plans and numerous suggestions of interest to city planners. It is pointed out in the report that none of the nine plans follows the characteristic gridiron system of American cities. While the street systems of the various plans differ widely from each other, all are irregular in some degree. In all the plans attention has been given to the requirements of through traffic on important streets, and there has also been general recognition of the importance of so arranging minor streets as to avoid through traffic on minor streets.

The average number of families provided for in the plans is 6,287, and the average estimated density of population is 70 per acre.



BY F. A. BOURNE, A. C. COMEY, B. A. HALDEMAN AND JOHN NOLEN



BY FREDERICK LAW OLNSTED, EDWARD CLARK WHITING AND
WILLIAM LYMAN PHILLIPS



BY F. A. CUSHING SMITH, OF THE HARVARD SCHOOL OF LANDSCAPE ARCHITECTURE



BY DUNINGTON-GRUBB & HARRIES, LANDSCAPE ARCHITECTS, TORONTO

Transportation and City Planning*

Some Important Factors in the Problem of Providing Cheap,
Rapid and Convenient Facilities for Communication Between
the Various Parts of a City



By Milo R. Maltbie

Public Service Commission, New York City

IN the discussion of city planning there has been a noticeable lack of consideration of transportation facilities. Volumes have been written on the relative advantages of street plans, and the ingenuity of engineers, landscape architects and municipal experts has been taxed to discover the most attractive design. But with the exception of this one factor—the public highway—so little consideration has been given to transportation that it is almost a virgin field from the standpoint of city planning. Yet I venture to assert that there is no one factor, with the possible exception of topography, which has a greater influence not only upon the direction of city development but upon the character of the city from every standpoint.

It is impossible for a considerable number of people to live in a small area without many transportation facilities. The country village without a railroad never passes the rural stage. It is obviously impossible for a community to become a center of industry and commerce without numerous means of communication with the outside world, and metropolitan cities must have not only facilities for the importation of food products and raw materials and the exportation of manufactured articles, but various methods of transportation within the city itself. There is competition between cities, and the one which has the best transportation facilities by land and water is ordinarily the one which increases most rapidly in population and is the largest center of trade, industry and commerce. The city which has the cheapest, most rapid and most convenient transportation facilities for communication between its various parts, other things being equal, has the most productive and healthful citizenship.

A few illustrations will suffice. It has been found that the commuting zone is gen-

erally limited to the area which can be reached within 45 minutes or an hour from the heart of the city, and usually the great mass of population is within a half hour's radius. It is not so much a question of distance as a question of time, together with the convenience of travel; and persons will go further if it is not necessary to change facilities, as from rail to boat, or from one railroad to another railroad, than they will if the trip involves such inconvenience. As the area which may be reached varies with the square of the radius, it is apparent that if it is possible to go twice as far from the center in one city as it is in another during the same length of time, the available area is four times greater in the first instance than in the second; and, with the same population, the density of the area inhabited need be but one-fourth in the first case of what it is in the second, and single houses of two stories in height will house the same population that would in the second case of necessity be housed in tenements, solidly built, of from four to six stories.

Attractive housing schemes may be planned and their advantages widely advertised; a fine system of parks, beautiful streets, adequate systems for water supply, lighting and sewerage, beautiful school buildings, libraries and every other social advantage may be provided; but people will not and cannot live there, no matter how beautiful and attractive the scheme, unless they are served with cheap and rapid transportation. Thus, when one examines the map of any large city, he notes that population has followed transportation lines and that along these radial lines there are the ganglia which center at railroad stations. Between these radial lines there are areas which are comparatively unoccupied, and which, as the crow flies, are nearer the center of population than the settled areas along the railroads. It seems to have been taken for granted frequently that one may

* From a paper read at the Fifth National Conference on City Planning, Chicago, May, 1913.

plan a city and then depend upon transportation experts to provide transit facilities—that different areas can be set aside for factories, shops, theaters, offices, residences, parks, etc., and that then some sort of transportation system may be evolved to fit the necessities of the plan. But if conscious city planning is to be substituted for accident and haphazard development, the two things must go hand in hand, that is, transportation facilities must be considered at the same time that other factors are under discussion.

The Value of Straight Streets

There is a marked tendency among city planners to use curved streets and broken streets—streets that constantly change their direction. From an artistic standpoint, these plans are often very successful and the treatment of the long, straight street is a difficult matter, but the old epigrammatic statement, that the curved line is for pleasure and the straight line for business, holds true to-day. Cheap rapid transit would be practically impossible in a city wholly composed of curved streets or streets which change their direction at short distances. The cost of construction would be large. Private property would have to be taken at many points. Large cost of construction would mean large fixed charges. Operating expenses would be increased because the loss of current in acceleration and retardation and cost of maintenance and repairs would be heavy. Curves reduce speed, reduced speed means increased time in transit; an increase in time means a reduction in the area which can be served, which in turn is a cause of congestion.

The main arteries of traffic should be straight, or as nearly straight as the topography of the city will permit. But it is not necessary that the entire city be checkerboarded. In residential areas, between main lines of traffic, there is ample room for exercise of ingenuity in geometrical combinations, which may be beautiful and attractive; but these areas ought not to be planted where they will interfere with the extension of through transportation lines.

Interdependence of Factors

The close relation between the various factors in city planning can be seen in another direction. Foreign cities have gen-

erally recognized the principle that the height of buildings must have some relation to the width of streets. The regulations have been determined in large measure by considerations of health, such as the importance of having natural light in the lower stories and sufficient means of ventilation. But the relation between transportation and height of buildings has been little considered. It is obvious, however, that as buildings increase in height the demand for transportation increases. The streets in a country village are often as wide as those in a metropolis, but it is obvious that a city with buildings ten, twenty or thirty stories in height ought to have a larger street area.

In the lower part of Manhattan the street plan is practically the same that it has been for generations. All of the available streets will soon be occupied by rapid transit lines for the transportation of passengers. Unless additional streets are to be cut through at enormous expense it will be necessary to limit the height of buildings and diffuse congestion, or to construct subways on lower levels. In addition, provision must be made for the transportation of materials, and even now it is apparent that if they are to be handled economically some provision must be made other than the one in use, viz., distribution by truck from distant freight terminals. If freight subways are to be built, they must be located below the passenger subways, which will place them further below the street surface, with all of the attendant inconvenience.

Correlation of Facilities

The correlation of the various facilities for transportation of passengers is probably the most important, and perhaps the most difficult, phase of the problem. The location of terminals and lines devoted exclusively to interurban traffic is not especially difficult, but practically every railroad does a suburban business, and, in some cases, it carries a large percentage of the population of the city itself. So far as railroads do a suburban and urban business, it is essential that in every city plan provision shall be made for the location of stations at convenient points, and these locations ought to be selected with great care.

In this connection there are several principles of considerable importance. In the first place, terminals should be eliminated as far as possible. They are costly to acquire,

expensive to maintain and increase rather than decrease congestion. So far as possible, the lines should be operated through a city and not terminate therein.

Secondly, there should be a sufficient number of station stops to distribute the traffic and to afford convenient means of connection with other facilities. It is almost impossible to utilize the same set of tracks for interurban, suburban and purely urban business. Ordinarily, the first two classes can be combined, and every railroad should be required, so far as practicable, to transport persons and property between points within the city boundaries. No railroad should be relieved of its obligation to contribute to urban transportation merely because it finds suburban and interurban business more profitable and more easily conducted. But it will be difficult in metropolitan cities for all three classes of business to be satisfactorily carried on a single system. Sooner or later most of the urban business must be done by separate lines. When the time of separation comes, the through lines should not be permitted to unload their passengers at the outskirts of the city and to compel the urban lines to distribute their traffic. They should be obliged to operate lines through the heart of the city and, so far as possible, distribute their own business. This does not mean that the through lines should be operated without relation to the urban lines, but that they should not be allowed to take the cream of the traffic without some of the skim milk.

Thirdly, it is essential that the interurban and suburban lines be so located that they shall have a relation to the purely urban facilities. It is practically impossible for each trunk line, or all such lines acting jointly, to provide for the complete distribution of passengers, i. e., to land every passenger within a short walking distance of his destination. For the general distribution other means of transportation must be provided, and in order that all facilities (surface lines, elevated roads, subways, omnibuses, etc.) may successfully perform their function there must be a correlation and unification of some sort.

In working out a plan there are several points to be noted. The stations upon the through lines should coincide with express and local stops on the urban rapid transit lines, and the surface lines should radiate

from express as well as local stations. The general idea throughout should be to carry persons as quickly as possible from one point to another, for increased speed means increased capacity and a greater area of service. It is also cheaper to carry persons upon express trains than upon trains that make every stop, provided there is a sufficient number to fill these express trains and utilize the tracks at some time of the day to their capacity. The tracks upon which trains make every stop should have stations at frequent intervals, but here there should be a careful balancing of distances; for if the stations are too close together the line ceases to be a rapid transit line and usurps the function of surface transportation either by street railroads, omnibuses or taxi-cabs. Speaking generally, this last group should be used to carry persons short distances, and in areas where the traffic is not sufficient to warrant a more expensive and a more rapid system of transportation. The proper adjustment of these facilities is one of the most difficult of city planning. In the New York subway the idea of local and express service on parallel tracks was worked out quite successfully, and was a distinct contribution to the science of urban transportation. Experience has shown, however, that the express stations are not far enough apart to distribute the traffic properly. It is natural for everyone to want all trains to stop at the station which he patronizes, and there is usually danger that too many express stations will be constructed, rather than that there will be too few.

Can All Cities Have Subways?

The question of cost is a factor which must not be overlooked. The success of subways in a few cities has given rise to the idea that every city should have subways and that all will be profitable. This is a mistaken notion. The experience of London shows that there is no particular financial virtue in an underground railroad, and that unless properly located and made coördinate parts of a comprehensive system it is likely to have limited success. Subways are easily operated, but they are expensive to construct, and the large cost of construction means large fixed charges. In order to affect this burden there must be dense traffic, or many persons riding short distances. Dense traffic, however, means congestion

of population. Areas given over to private houses, each with its own grass plot and garden, cannot furnish a sufficient population to support a subway unless the ride is very short and the rate of fare high. The ride is not apt to be short, for land values in the central part of a city are ordinarily so high that people cannot afford to build one-family houses and devote a considerable area to grass and garden. In order to have single houses, people must go some distance from the center of the city, and then the ride is long. If the fares are high, the great mass of the population cannot afford to pay them and will be forced to live in tenements rather than pay the high fares and high rents which such conditions necessitate. The area naturally tributary to a subway, or any line, is also limited in extent, for experience has shown that persons will not ordinarily walk more than ten minutes to reach a point where they can board a transportation line. Unless the city is to enter a new field of activity, therefore, or in some manner prevent the inflation of land values, or defray part of the cost of subways by some method which relieves the enterprise from high fixed charges, it is impossible for cities to have subways unless, at the same time, they are content to have congestion — tenement houses, solidly built blocks and not separate dwellings. The city which desires to avoid density of population and to further the garden city idea must resort to other means of transportation or solve the financial problem.

No matter how the cost of rapid transit lines be paid, their construction results in increased land values. Unless there is some restraining influence, the increase in land values will be followed by the erection of tenement houses; otherwise the landowner would not be able ordinarily to secure an adequate return upon the value of his property. But the increase in land values is not the original cause of congestion; it is rather the effect of congestion, for land values would not increase if it were not possible to secure a return for such increased value.

The greater the cost of rapid transit lines, the larger the fixed charges and the larger the cost of transportation which must be paid by the traveling public. The smaller the construction cost, the greater the number of lines that could be built, and

if many lines are constructed and many areas are opened to development the competition between these areas will tend to keep prices down—assuming, of course, that the gradual growth in population is not stimulated by some other force which makes the demand for land unusually large. Consequently, more attention should be given to reducing the cost of rapid transit lines. A subway is the most expensive kind that can be built. The old style elevated road is very much less expensive, and the solid floor, or so-called “noiseless” type, stands between the two. Those interested in a suspended railway claim that it has many advantages, particularly in cost of construction. All of these elevated types are more comfortable than subways, having better ventilation and light. The principal objection to the suspended railroad is that it cannot be operated in connection with any other line and that there can be no interchange of equipment.

Transportation of Property

Thus far I have considered principally the question of passenger transportation, but the transportation of property is not less important. The cost of living, so far as it is affected by the cost of food products, is to a considerable extent a problem of transportation. The fact has been repeatedly pointed out that food products may be selling at ridiculously low figures at the point of production, that the market may be glutted and that the producer may be barely able to make a profit, while, at the same time, the cost to the consumer may be high. It is apparent that the means of bringing the producer and consumer together are defective if such conditions obtain; and while transportation is not the only cause, it plays an important part. What is true of food products is true of all materials. If the means of transporting raw material to the factory, and manufactured goods from the factory to the consumer, are inadequate, expensive and slow, the cost of the product will naturally reflect these conditions.

It is essential, therefore, that in every plan of city development provision should be made for a prompt and cheap method of distribution. Thus far the railroads and steamship companies have assumed that their function ended with the provision of terminal facilities somewhere within the

boundaries of the city. Not infrequently these terminals are located upon the periphery of the city and usually considerably removed from the consumer and the factory, so that products have to be transhipped and hauled long distances by wagon or motor truck. Doubtless this is a fairly satisfactory method in a small city where the terminals are not far from any part of the city, but in metropolitan centers such a plan is quite unsatisfactory.

The maintenance of terminals in the heart of the city is very expensive, but thus far sufficient consideration has not been given to the correlation of various factors. The yards are commonly large areas, where only the surface is utilized. No use is made of the space either above or below the tracks and seldom has any attempt been made to bring warehouses and factories into close proximity. There are a few instances where attempt has been made to reduce the cost and loss of time in the transportation of property from terminals to factory and warehouse, and successfully too, but these scattered instances are so few that they have not yet had a far-reaching effect. However, the movement must be in this direction. The location of factories, warehouses and shops, where they are not directly connected with water and rail transportation, is uneconomic and wasteful.

The distribution of food products represents a somewhat different problem. These must go to every home, and consequently the facilities for distribution must reach every part of the city. In this connection the country trolley and the city street car line have not been fully utilized. During the night time and early morning hours these lines are practically unused. The cost of operating cars at these times would entail practically no fixed charge, and the oper-

ating expenses would be small. If the country trolley roads should establish collection points at short intervals, and if the products could be brought into the very heart of the city and distributed in the early morning hours, a very valuable and useful service could be performed. The street car systems could also be used for the distribution of property from railroad centers, and thus connections established with the more remote districts tributary to every large city. Even the rapid transit lines might be utilized, if found necessary, during the night hours.

In conclusion, a word regarding the city's control of transportation development. As long as the various facilities are in the hands of private individuals and controlled by different corporations it is obvious that they cannot be brought into correlation and each made to serve the public in a proper way without a superior force. Each ought not to be permitted to carry out its own wishes regardless of its relations to other facilities. It is absurd that a company should locate a terminal removed from other transportation facilities and insist that the city should provide means for the distribution of the traffic which it brings to this inconvenient point. Moreover, conditions change, and what is proper and adequate in one generation is often inadequate and ill-suited to the demands of the succeeding generation. Consequently, there must be public control not only over the first location or first scheme of development, but there must be in the hands of the city the means whereby continually the varied interests may be kept in harmony, and whereby the ever-changing needs may be met by changes in transportation facilities. The city should always be in a position where it can dominate the situation.



Municipal Market Buildings in the Philippines



The Civic Betterment Brought About by the Program of Modern
Market-Building in the Municipalities of the Philippines



By John R. Arnold

Executive Bureau, Manila

THE efforts to establish suitable market buildings in the towns and villages of the Philippines are of the greatest importance from at least three different points of view: those of local economic prosperity, of public health, and of public finance.

These municipal markets derive their great economic importance from the fact that the character of the means of communication with the rural centers combines with the lack of capital and the very small scale on which agricultural and other rural industries are for the most part conducted, to put the "general stores" of the rural centers of the United States without the range of the practicable. Since, then, the establishments for buying and selling which take their places must necessarily be very small and more or less temporary, the local retail trade would necessarily tend to be concentrated in regular market-places, and to be held at stated times, ordinarily one or more set days of each week. Even when the volume of trade is sufficient to make the various establishments permanent, they still tend to be individually on a very small scale, and to group, after the usual Oriental fashion, in markets or bazaars.

The importance of the sanitary problems presented by these markets arises from the physical environment of the average Philippine town, and from the character of its food supply. The drainage of the central parts of a town, which ordinarily means those parts convenient to water transportation, is nearly always defective, and frequently all but non-existent. Serious as it is in itself to have the majority of municipal markets held on sites of this character, the resulting conditions are rendered still worse by the perishable nature of most of that large proportion of the market stocks that are used for food. Something like half of the total value of the agricultural product of the Islands consists of hemp, sugar-cane, tobacco, copra and cocoanut oil, which do

not directly serve the original producer for subsistence. There must, therefore, be almost everywhere an extensive local trade in rice, fish, vegetables, fruits and meats. Ice is rarely to be had, and cold-storage goods are in any case little appreciated. Even cereals spoil rapidly during a large part of the year, and must be carried in small stocks, to be turned over as frequently as possible. Indeed, considering everything, and above all else the widespread popular ignorance of the danger involved, it would require in every town a corps of inspectors with Argus-like vision to preserve entirely sanitary conditions in a Philippine market of any but the very best type.

Municipal Finance in the Philippines

Finally to be considered are the public revenue interests involved. The establishment or licensing of markets has long been in the Philippines, as in most countries of Europe, a public monopoly. As in all such cases, moreover, this monopoly, apart from the considerations of police and sanitary control obviously involved, is of importance on its financial side. That this is especially true in the Philippines arises from the fact that the power of the elective municipal authorities to increase the local revenues with local needs is very limited, and that the legal maximum is very low. Flourishing towns of from ten to fifty thousand inhabitants have only the revenues of country villages. The restrictions which are responsible for this state of affairs were presumably needed in the beginning, when the country was prostrated by war and epidemics of disease, but it is now becoming pretty generally felt that a more elastic system is essential. It seems certain, indeed, that radical changes in the general laws on this subject will be made in the next few years; but in the meantime the question of finding money for rudimentary public improvements is a pressing one.

In the course of a recent investigation



UNDRAINED, FILTHY MARKET IN THE PHILIPPINES, SHOWING CONDITIONS NOW BEING REMEDIED

into an application for a loan to build a market from the municipality of Macabebe, in Pampanga Province—a name familiar to Americans as the place where the great majority of the Philippine scouts have always been enlisted—it was found that although this town had, according to the last general assessment made in 1908, real estate subject to taxation to the value of \$239,350, and had imposed the maximum land tax for the three years just preceding

the investigation, yet the amount actually expended on permanent improvements during the three years taken together was only \$1,592. This is a typical and by no means a particularly unfavorable case. An act of Congress permits the issue of bonds; but the total borrowing powers of the average municipality under the restrictions imposed is so small, and the procedure required is so cumbrous, that it has been only in very rare cases that this provision could



NEW CENTRAL MARKET BUILDING IN JARO, ILOILO, P. I.

Dimensions, 28 x 35 meters; built with concrete floor, reinforced concrete posts, and iron roof on frame trusses

be actually carried out in practice. Until, then, further powers of taxation should be conferred by law, the sole solution of the difficulty has appeared to be the loaning of funds which have happened to be in the possession of the central government and temporarily idle. It was when the question arose as to what class of municipal improvements could most properly be selected to receive the benefit of such loans that the special administrative importance of the markets came to be perceived; for these, almost alone among the permanent public works that would be in any way within the present horizon of the average Philippine town, can be made to pay a return on the money invested in them.

Markets a Source of Public Revenue

The municipal governments had always been accustomed to derive a certain amount of revenue from the rent of space in the municipal market site, formerly, as a rule, farming it through a contractor, but in more recent years collecting it by administration. The municipality of Macabebe had been deriving over \$900 a year from this source since this latter method was put into operation, and had increased this amount to something over \$1,000 during each of the two years immediately preceding the investigation referred to. It seemed, then, that money loaned for the improvement of municipal market property not merely contributed to the betterment of the trade and sanitation of the towns concerned, but might well be expected to give rise to actual increases of revenue, which could themselves in turn be utilized for improvements of a less directly remunerative character.

The probability of such increases of revenue had been established by actual cases; and it was made particularly great by the miserable character of most of the existing markets from which this portion of the municipal receipts had so far been in actual practice derived. A typical Philippine market-place of the old order was an area usually of low land, and so poorly drained that, in the season of hard rains, it became more or less of a quagmire. There were seldom any permanent buildings. Those that did exist were stalls or booths of bamboo and thatch, which were put up by the small merchants who rented the space, and in the repair of which the municipality had no direct interest. The facilities for clean-

liness of any description were meager in the extreme; and conditions in this regard were not improved by the fact that the vendors were often allowed to sleep in these booths. When, as was frequently the case, the market site abutted on public or private property occupied by permanent buildings, the flimsy stalls, any one of which would in the dry season have been reduced to ashes within five minutes from the time of a spark's falling on it, greatly increased the local fire risk. In view of this state of affairs, it was obvious that almost any sort of modern fireproof buildings, with proper ventilation and sanitation, and in good locations, would mean at once an enormous change for the better from every one of the standpoints that have been discussed.

In the case of the town of Macabebe, it was computed that the construction of such a new market at a cost, including the purchase of new site, of about \$10,500, would raise the market rents from about \$1,000 to \$2,000 or \$2,500, thus providing a return of 10 to 15 per cent on the investment; and that this increase would, even during the first ten years, when interest and annual installments would have to be paid on the debt contracted, leave a surplus for investment in further improvements of a permanent nature. The loan once repaid, it appeared that the surplus would probably add 30 per cent to the gross revenues of the town, and more than triple the sum available for expenditure, over and above those expenses of a purely administrative nature.

It was fortunate that, at about the time when the desirability of a systematic program of permanent improvements in the municipalities became especially pressing, there also became available amounts of money considerably larger than had theretofore been the case, for the purpose of making loans to the municipalities for the construction of markets. By July 1, 1912, in accordance with an act of the Philippine Legislature, it became possible to increase the total amount of government loans outstanding by nearly 200 per cent. A portion of the amount made available for immediate investment was temporarily set aside for construction loans to the Manila Railway Company. Other loans were made for road- and bridge-building. The act referred to, however, specified that the loans were to be made "to aid in the construction of public works, particularly those of a



OLD TYPE OF BOOTHS IN THE JARO MARKET

revenue-producing character." The roads and bridges in question, though of enormous economic benefit, did not fulfill the condition of this last clause; and it has therefore resulted that a large portion of the funds in question has been loaned for market improvements. All these loans are at 3 per cent interest, payable quarterly, and are repayable in ten annual instalments.

The Buildings

The market buildings constructed with the funds thus made available are built in accordance with standard plans worked out by experience and with due reference to local economic and sanitary needs. They are open on all sides, with floors, walls and pillars of reinforced concrete, and are covered with substantial iron or tile roofs laid over trusses of hard wood or steel. The ventilation, drainage, and facilities for cleaning are as perfect as they can be made, the new sites being selected with special reference to these considerations, as well as to the convenience of the location for buyers and sellers. The general plans provide for one or more central buildings, 30 to 100 feet in width, and of lengths determined by the exigencies of the sites, while around the sides are rows of small bazaar stalls, facing the central building. All outside stalls are arranged so that they may be closed and securely locked, and the main entrances are provided with iron

gates to be locked at night, when no one but the caretaker is allowed to stay within the inclosure. Only those who have actually seen both the old and the new types can fully appreciate the benefits of the change.

As regards their efficiency in increasing municipal revenues, these new markets have quite fulfilled expectations. In the municipality of San Pablo, in the important cocoa-nut growing district in the southern part of La Laguna Province, one was constructed at a cost of \$12,000, and was opened to the public June 8, 1910. The receipts from the old market had averaged about \$1,030 a year; those from the new establishment have been at the rate of \$6,196, an increase of 473 per cent. The increase in the annual income from the market amounts to 42 per cent of the investment, and it would be possible for the municipality to repay the cost of the modern building in two years from market receipts alone. All towns are not so favorably situated as this, which is not only centrally located in a prosperous district, but is connected by rail with Manila; but in every case recorded the markets are returning from 10 to 50 per cent on the investment.

The Indirect Benefits

Indirect benefits have already resulted and are bound to result in still greater measure from the establishment of these institutions. From the economic point of



CORNER OF A NEW MARKET BUILDING WITH OPEN TIENDAS (BOOTHS) AT LEFT

view they tend to build up centers and arteries of trade, and to encourage increased plantings of marketable products; they supply motives for more extensive intercommunication, and thereby tend to introduce new commodities and raise the standard of living; and, since the business in them is almost wholly conducted by Filipinos, they confute the frequently repeated traveler's tale to the effect that the people were not competent to handle the retail business of their own country. They have benefited the public health by doing away once and for all with the old type of market, where there was close contact of numerous buyers and sellers within the ill-kept premises, and where food exposed for sale was given promiscuous handling as well.

Finally, from the financial point of view, they have, by adding to the normally scanty municipal revenues, opened up on a modest scale numberless avenues of civic progress.

The most obvious and probably the most important of these point towards the construction of such permanent public utilities as comfortable and hygienic school buildings, artesian wells or other systems of water-supply (which have in some cases reduced the death-rate in towns in which they have been installed by fully a half), arrangements for street lighting, the provision of decent cemeteries, and the turning of the municipal plazas, which a wise provision of the old Laws of the Indies had required every town to provide, but which had usually remained weedy and ill-kept, into pleasant parks or playgrounds. It may be questioned, indeed, if it is often possible in any country, by the direct expenditure of so little money, to bring about civic betterment so great in amount and so widespread, as is now being, and will continue to be, done by the program of modern market building in the towns of the Philippines.



How an Instructive Baby-Saving Show Was Held in Wilkes-Barre for Less Than \$200

By Stanley Freeman, M. D.

SOME years ago Bergeron said that "a baby who comes into the world has less chance to live one week than an old man of ninety, and less chance to live one year than one of eighty." For a long time statistics have shown tremendous death rates among infants, particularly those under one year of age. Since this great sacrifice is caused by ignorance and poverty, ignorance being far in the lead, it is time that some exceptionally strong effort should be made to lessen the number of deaths, by educating in a clear, concise and simple way, those who have no other means of obtaining health lessons.

The methods which have been found most suitable for giving such information are sending out literature from the State Health Department to the different newspapers, societies and organizations; establishing milk stations and visiting nurses' associations; and, by far the most important way, conducting a baby-saving show. Here mothers can actually see statistics and have them thoroughly explained; can see and learn the proper methods for feeding and caring for babies by actual demonstration; can hear lectures on the subject and be taught the hygienic and sanitary conditions which should be carried out in their homes.

This plan can be successfully carried out in a town or city, regardless of size, at a minimum expense. The only service necessary is the earnest coöperation of the physicians, business men, societies, charitable organizations, local health officials, chamber of commerce officials and councils. Such a show was held in Wilkes-Barre, Pa., last summer, and its success was due to the work of all concerned in its organization, and, more than that, to the generosity of the leading business houses in contributing much of the material necessary for demonstration and decoration. This show was the result of a similar show held in Philadelphia earlier in the season.

The state health authorities, under the direction of Dr. Dixon, associated with the local physicians in their desire to see a show of this type held in Wilkes-Barre which, with the contiguous towns, has a population

of about 300,000 people. The city Chamber of Commerce looked after the financial end of the show. The Wyoming Valley Society for the Prevention and Treatment of Tuberculosis contributed \$100, and the same amount was given by the City Councils—the first time that such an appropriation for such a purpose has been made in that community. These two appropriations covered the entire expense, which was \$193.67.

The committee which was organized by the local representative for the State Health Department was composed of physicians, some of the clergy, officials of the Chamber of Commerce and the local health board. The chairman of this committee was one of the leading clergymen. The committee met bi-weekly. Sub-committees were appointed, each with its chairman, as follows:

1. The *Finance Committee* certified and paid all bills incurred for necessary expenses, such as printing, decorating, literature, etc.

2. The *Decorating Committee* took charge of decorating the hall and of the material used, so that the exhibit would be inviting and displayed to the best advantage. The decorating was done by one of the large stores, and the material was furnished by the same firm and also by the State Department of Health.

3. The *Publicity Committee* looked after the newspaper articles, upon which much of the success of such a show depends. Placards were printed in the various languages and placed in store windows throughout the community. Newspaper men served on this committee and produced two or three columns daily during the show and for one week previously. They placed advertisements in all the local motion picture houses, which were thrown on the screen between the films. The leading stores made mention of the show in their newspaper advertisements. It was announced from the pulpits on the Sunday morning when the show opened. In these various ways it was given extensive publicity.

4. The *Local Exhibit Committee* took

charge of the arrangement of the exhibits given by the different institutions which are doing health work, and offered suggestions for effective display, so that the exhibits were readily understood. These exhibits were simple and clear and were labeled in large type in various languages.

5. The *Program and Arrangement Committee* took charge of the times for the demonstrations, the lectures and the daily service of committees. These committees were composed of physicians from the surrounding towns, who were in attendance to aid in demonstrating on their allotted days. In this way each surrounding town was represented at the show. A committee of

ladies was appointed to serve in a similar manner. Lectures were given in different languages by physicians, the local physicians speaking at the morning and afternoon sessions and the physicians from the State Health Department speaking at the evening sessions.

6. The *Moving Picture Committee* furnished the most attractive feature at the show. They rented a machine and an asbestos screen for a small sum. The films were donated by well-known moving picture firms; they were very instructive and drew large crowds. One film revealed a drop of water as it appeared under a microscope, showing the germs before and



ONE OF THE WINDOW DISPLAYS AT THE WILKES-BARRE BABY-SAVING SHOW

after boiling; another showed sanitary and insanitary housing conditions. Now and then, to retain interest, an amusing picture was introduced. From an educational point of view these pictures were a potent factor.

7. The *Fly Crusade Committee* secured literature on the dangers of flies, and obtained and demonstrated all the various trapping and swatting devices. They also secured a moving picture film known as "The Fly Pest," which pictured the life of the fly and showed its far-reaching dangers.

8. The *Ladies' Aid Committee* consisted of a chairman and many sub-committees, each having a chairman. They were all hard workers selected from the surrounding towns. Each covered a certain district where she notified neighbors and friends, and each was at the show on her designated day, attending her booth and directing the patrons.

The store room where the show was held was 20 feet wide and 75 feet deep. It was divided by a board partition into two equal sections; the front was used for the exhibits and the rear for moving pictures, lectures and demonstrations. This room was situated on one of the busiest thoroughfares in the town, along which most of the people from the congested districts passed. Use of this room was donated by a local business man.

The daily program of the show was published in the newspapers the day before, so that everyone who wished could be informed, and this saved the expense of extra programs. There were three sessions daily; morning from 10 until 12; afternoon from 3:30 until 6, and evening from 8 until 10.

The first demonstration in the morning was given by the Wyoming Valley Society, showing the proper methods of formulating and pasteurizing milk, and keeping it from being contaminated, and the proper method of feeding infants. This was followed by moving pictures for about thirty or forty minutes, and then a straightforward talk on infants by a local physician. After the lecture more pictures were given. The afternoon and evening sessions were of the same character as the morning sessions, except that a physician from the State Health Department lectured each evening.

In the exhibit room were booths made of white cheese cloth, containing the following:

(a) The Wilkes-Barre City Hospital and Mercy Hospital exhibits of pictures, charts, incubators, beds, cribs, etc., all properly arranged to show the necessary equipment of a sick room and hospital ward.

(b) The exhibit of the Wyoming Society for the Prevention and Treatment of Tuberculosis, which needs special mention for its widespread and excellent work. It was started five years ago and was taken over by the state one year after it had been in existence. It maintains patients at various sanatoria and local dispensaries as well as having an active milk committee which goes among the homes and instructs the mothers how to keep milk, and to feed and care for babies properly. This exhibit consisted of large instructive charts, pictures and photographs of the work, out-door homemade swings, out-door sleeping quarters, homemade ice boxes, etc. The Society's literature was widely distributed to the patrons of the show. Infant feeding was also demonstrated three times daily.

(c) The demonstration of the District Nurse Association and the Georgetown Settlement Association, showing with life-sized dolls the different ways that children were dressed among the various nationalities and how often they were overdressed, contrasting with this the proper methods of dressing. They also exhibited large cards with clever sayings regarding the duties of the mother to her infant, pictures of the work that has been accomplished, etc.

(d) The exhibit of the City Hospital social worker, showing two similar rooms, one well-kept and sanitary and one badly kept and insanitary. This was so interesting that it evoked much comment.

(e) The state exhibit, consisting of large blue-print charts, showing various statistics for different conditions throughout the state, large pictures showing good and bad housing conditions, pictures of proper and improper feeding of babies and numerous beautiful American and state flags, and much literature printed in the different languages for distribution.

The local health authorities showed various methods of properly taking care of contagious diseases, how milk plates are made in order to detect good and bad milk, and various methods and materials used in fumigating.

Other exhibits were given by the Crit-

tenton Home Association, the Homeopathic Hospital, the Home for Friendless Children, the local Playground Association and the State Dental Society. Much credit is due the nurses connected with the City Hospital, Wyoming Valley Tuberculosis Society and the Visiting Nurses' Association. Without the aid of these nurses the Show would not have been so well displayed and so successful.

This is just an outline of what can be accomplished by an energetic group of women, men and physicians in a community, regardless of size, for the purpose of promoting public welfare and health. Let it be urged that such a show or demonstration be carried on at least once a year in every town and community in this country, to aid in establishing an ever growing, healthy and prosperous nation.

A Cartoon Which Helped a Clean-up Campaign

THE ANNUAL BATH



Courtesy of The Chicago Record-Herald.

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The Pure Food Victory Won by the Women of Grand Forks

By Katherine G. Leonard

Secretary, Pure Food Committee, Civic League, Grand Forks, N. D.

WHAT has been accomplished by the Pure Food Committee of the Civic League of Grand Forks may be equaled or surpassed by any group of determined women in any small city. To be sure, it is somewhat easier to keep clean in a climate which has no excessive heat and moisture and with a population made up for the most part of Americans and Scandinavians. However, vigilance and education will more than make up for differences in climate, but efforts must be ceaseless if results are to be forthcoming.

When this committee was organized under the able leadership of Dr. May Sanders, chairman, the work was new to all, and methods had to be devised. The first step was a consultation with Prof. E. F. Ladd, State Pure Food Commissioner, who was of great assistance in suggesting just and reasonable methods of dealing with the

subject of sanitary inspection of foods so that the interests of both merchant and consumer might be safeguarded.

A general educational campaign was inaugurated. The state pure food and drugs act was printed in folder form, and a copy, together with a personal letter calling attention to the provisions of the law and asking coöperation in its enforcement, was mailed to each of the 128 food merchants then doing business in the city. The portion of the law applying to a special class of stores or goods was red-lined when sent to a man selling that article. For example, sections relating to bakeries were red-lined when sent to bakers; those applying to groceries were marked for grocers. Ten days were given the merchants in which to clean house and prepare for state inspection.

The state inspection continued five days,



AN ATTRACTIVE MARKET IN GRAND FORKS

of eight hours each, and the inspector was accompanied by Mrs. R. A. Sprague, who later became local officer. Each merchant was rated on a score card provided by the state commissioner for the purpose.

It became evident that the only way to secure sanitary inspection of food at intervals frequent enough to make the city food supply reasonably clean was to have a regular city official for the purpose. To that end a second petition was presented to the city council, with the result that an ordinance was passed providing for the office of food inspector. Mayor Murphy was fortunate in his choice of Mrs. R. A. Sprague, as she had proved her ability in the work of general inspector for the Civic League. The ordinance is an excellent instrument and answers many questions that arise in the work of inspection.

Ordinance No. 310

An ordinance entitled: "An Ordinance creating the office of inspector of provisions in and for the city of Grand Forks, North Dakota."

Be it ordained by the city council of the city of Grand Forks, North Dakota:

Section 1. There is hereby created and established the office of inspector of provisions, who shall be appointed by the mayor with the approval of the city council, and who shall hold his office for a period of two years and until his successor is appointed and qualified.

Section 2. The inspector of provisions shall receive for his services a salary of four hundred and eighty (\$480.00) dollars per annum, and shall give bond in the sum of one thousand (\$1,000) dollars with sufficient sureties to be approved by the city council, conditioned for the faithful and impartial performance of his duties as inspector of provisions, and pay over to the city treasurer all money belonging to the city which may come into his hands and deliver all property belonging to the city to his successor in office; which bond shall be filed in the office of the city auditor.

Section 3. Such inspector of provisions shall perform and discharge all his duties as such inspector under the direction, supervision and control of the board of health officer of the city of Grand Forks; and it shall be the duty of such inspector to inspect all meats, fish, oysters, birds, fowls, vegetables, fruit and other provisions produced or prepared in, or brought into the city of Grand Forks designed for human food and held or exposed for sale or other disposition within the city of Grand Forks, in any public or private market, bakery, stall, shop, store, restaurant, hotel or other place; or by any vendor or street hawker or other individual.

Section 4. It shall be the duty of such inspector to visit at frequent intervals each public and private market, bakery, stall, shop, store, warehouse and storehouse in said city, and each and all carts, wagons, sleighs and vehicles of vendors or street hawkers, in, at or about which any meats, fish, oysters, birds, fowls, vegetables, fruit and other provisions are kept, held, or carried for sale or other disposition as human food, and examine and carefully inspect all such vegetables, fruit or other provisions, and if any unwholesome meats, fish, oysters, birds, fowls, vegetable, fruit or other provisions so intended for sale or other disposition as human food, be found in or about any such public or private market, bakery, stall, shop, store, restaurant, hotel, warehouse or storehouse, or in any cart, wagon, sleigh or other vehicle of vendors or street hawkers, to at once give the person in charge of the same for the time being, notice to at once remove the same out of said city or to such place as such inspector shall direct, or to destroy the same, whereupon the person in whose custody and posses-

sion the same shall be found to be, shall at once remove the same out of the city, or to such places as said inspector shall direct, or destroy the same as may be directed by said inspector; and said inspector shall do and perform such other duties as may be required of him by said city council by ordinance or resolution, and any such person to whom such notice has been so given by any such inspector, who shall fail to at once remove the same out of said city, or to such place as such inspector shall direct, or to destroy the same if so directed, shall be subject to a fine of not exceeding twenty dollars.

Section 5.—No meats, fish, oysters, birds, fowls, vegetables, fruit or other provisions of any kind not being then fresh, sound, wholesome and safe for human food, shall be brought into the city of Grand Forks or offered or held for sale at any public or private market, store, stall, storehouse or in any other place in said city by any person.

Section 6. Every person keeping, maintaining or being in charge of any public or private market, bakery, stall, shop, store, warehouse, storehouse, cart, wagon, sleigh, or other vehicle in or about which any meats, fish, oysters, birds, fowls, vegetables, fruit or other provisions are held, kept, stored or offered for sale or other disposition, shall keep such private or public market, bakery, stall, shop, store, warehouse, storehouse, cart, wagon, sleigh or other vehicle in a clean, pure and wholesome condition, and if any such person shall allow or permit the same to be, become or remain unclean, impure or unwholesome, he shall be guilty of a violation of this ordinance.

Section 7.—It shall be the duty of the inspector as inspector of provisions, to inspect not less than once a month, all places where meats, fish, oysters, birds, fowls, vegetables, fruit or other provisions are handled and offered for sale, and any person selling vegetables, fruit or other provisions under this ordinance shall keep the premises, storerooms, ice chests and cooling rooms in which the provisions mentioned above are kept, and any utensils, vehicles, or receptacles by means of which they are handled, in a clean and sanitary condition and protected in such a manner that the provisions mentioned be not contaminated with dirt, insects, or other objectionable matter.

Any person having charge of the aforesaid premises, vehicles and utensils, shall at all times permit the inspector free access thereto.

Section 8. The inspector shall keep a record open to public inspection in which he shall enter the date of all inspections, the results of such inspections and the name of the person who owns the premises so inspected. It shall further be the duty of the inspector to make detailed monthly reports of all the inspections made by him, their results and any other work or duty performed by him, to the city council at their first meeting each month.

Section 9.—It shall be the duty of every person knowing of any meats, fish, birds, fowls, vegetables, fruits, milk, or any other articles intended for human food, being brought, sold or offered for sale, or being in any market or store, public or private, in said city, or in the possession of any other person and not being sound, healthy and wholesome, for such food, to forthwith report such facts and the particulars relating thereto, to said inspector.

Section 10. Any person violating any of the provisions of this ordinance or neglecting or refusing to comply therewith, shall, on conviction, be punished by a fine of not exceeding fifty dollars or by imprisonment not exceeding twenty-five days, or both such fine and imprisonment, in the discretion of the court.

Section 11. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

Since her appointment as local food inspector, Mrs. Sprague has also been made resident food inspector by the state pure food commissioner.

The work of the food inspector showed conclusively that the education of the public had only begun and that in order to make her labors most efficient the pure food committee must devise means of keeping the subject before the people. The greatest menace during the late summer

| Perfect Score (100) | SCORE CARD -o- SANITATION -o- NORTH DAKOTA | | | | | | | |
|--|---|----|--|----|-----------------------------------|---|--------------------------------------|----|
| Grocery Bakery Confectionery Factory Hotel Kitchen Restaurant Creamery Meat Market Slaughter House Drug Store | Front Shop Score (2) Perfect (32) | | Back Rooms, Store Rooms, or Work Rooms. Perfect (36) | | Cellar or Basement Perfect (8) | | Toilet and Wash Room Perfect (20) | |
| | Ventilation | 2 | Ventilation | 2 | Floors | 2 | Floors | 2 |
| | Light | 2 | Light | 2 | Walls | 2 | Walls | 2 |
| | Floors | 2 | Floors | 4 | Stairs | 1 | Ceiling | 2 |
| | Walls | 2 | Walls | 2 | Ventilation | 1 | Bowl or Wash Basin | 2 |
| | Ceiling | 2 | Ceiling | 2 | Light | 1 | Seat | 2 |
| | Screens | 2 | Screens | 2 | Stock | 1 | Sent | 2 |
| | Fixtures, Tables, Sinks, Fountain, etc. | 2 | Storage | 2 | Total | 8 | Ventilating line | 2 |
| | Cuspidors | 2 | Water Supply | 2 | Back Yard Perfect (4) | | Location | 2 |
| | Drugs, Vegetables, etc. | 2 | Cooling Room, or | 5 | Tidy | 1 | Towels | 1 |
| | Patent Medicines, Meat, Milk, etc. | 2 | Refrigerator | 5 | Clean | 1 | Soap | 1 |
| | Prescription Counter, Butter, Cheese etc. | 2 | Tools, etc. | 2 | Contaminating | | Spring door | 2 |
| | Bread, Confectionery, Canned Goods etc. | 2 | Machines, etc. | 2 | Surroundings | 2 | Cuspidors | 2 |
| | Instruments, etc. | 2 | Cuspidors | 2 | Total | 4 | Total | 20 |
| | Display | 2 | Personnel | 2 | | | | |
| | Personnel | 2 | Total | 36 | | | | |
| | Total | 32 | | | | | | |

Note:—In scoring slaughter houses by this card leave out (Front Shop) and make perfect score of work room (68) or doubling each score except cuspidors and personnel. Under score place visited.

SANITARY INSPECTOR'S SCORE CARD, GRAND FORKS, N. D.

and autumn is the house fly, and no work along the line of sanitary food supply can be effective that does not emphasize the necessity of doing away entirely with the breeding places of this deadly pest. Grand Forks has a garbage ordinance which, if strictly enforced, would go far toward accomplishing this end.

However, no matter how good the law, public opinion must be back of it to make it effective, and education must be administered in large and frequent doses. The newspaper and motion picture theater are excellent teachers, since they reach the largest audience, and the one most difficult to interest. Through the courtesy of the *Grand Forks Herald*, a fly page was edited by the pure food committee in August, when the fly season is at its height and the dread of typhoid is strong with the parents of the less fortunate classes. Yellow journalism of the most lurid type was resorted to, and so black was the little pest painted in both prose and verse that the public seemed roused to the situation.

Closely following the press exposé of the fly came the climax of the season's campaign for pure food and sanitary conditions. The public-spirited proprietor of one of the motion picture theaters gave the pure food committee the use of the theater with all proceeds for one day for the presentation of the fly-pest film. The film, with others, was shown six times to an audience of some 1,200 persons, while explanatory talks were given by leading physicians, among them the president of the state

board of health and the state bacteriologist. The advertising for the show was donated, also the prizes for the boy and girl selling the most tickets. The net receipts amounted to \$112.60, which became a financial basis for the work.

A few months later a second film was rented and shown for three days at a local picture theater. This was the anti-tuberculosis film called "The Man Who Learned." Both these films may be rented by clubs by special arrangement with the local picture theaters, or the proprietors may attend to securing these films and run them in their regular shows without charge for rent. It is desirable for the women interested to know what other films are to be run, so that the whole performance may be of good character. Special musical features help to increase the crowd, which, in the case of the fly-pest film exhibition in Grand Forks, was so eager that the services of two policemen were required.

As a result of complaints from dairymen and confectioners that bottle and ice-cream cans were returned in bad condition, cards with hints to housewives were printed and distributed by milkmen to their customers.

The subject of a municipal slaughter house was brought before various organizations, and committees were appointed to coöperate in a city-wide effort to solve the problem. The subject of a city incinerator for the disposal of garbage was also agitated.

The pure food committee, through the courtesy of the Minnesota food commission,

secured the pure food exhibit of the commission, placing it in a conspicuous place on the grounds during the state fair, with a lecturer in charge. This proved a great attraction, and the space in front of the exhibit was crowded with people from the rural districts who had heard little of the new gospel of pure food. The local food inspector visited each food concession as it was being placed, and explained the pure food law, with a hint that it was to be enforced on the grounds during the fair. Several later visits were made to the concessions, and suggestions were made and many bad practices discovered and stopped. For example, lemonade must be made from lemons rather than from acid powder was one order enforced. It was noticeable that the eating places having screens were the most popular.

The second season of pure food education is naturally less strenuous for the committee, but not so for the inspector, who, if she be the woman for the place, continually finds new problems to be solved. No small part of her time must be devoted to receiving complaints and assisting merchants in planning ways of complying more completely with the law. She should be

kind, tactful, firm and resourceful, with a touch of the Sherlock Holmes quality.

It is well to invite the members of the city council and board of health to take an early spring drive to the city dumping grounds and slaughter houses—early enough to find conditions at their worst.

No one factor can make for the health of a community more surely than a strict enforcement of the pure food laws. This enforcement by a special officer makes it possible for bad practices of all kinds to be traced and eliminated, either by persuasion or fine. It makes it possible for the poor to be supplied with clean, pure food, and this is really the greatest good that can come of the law, since the well-to-do, who buy at large, well-kept stores on main business streets, where neatness is an asset, can more easily influence the food merchants. The poor, buying in small quantities, patronize the small, ill-kept store in the vicinity of the home, and have little influence. With food inspectors, one store is as rigidly scrutinized as another, and the small buyer at the small, out-of-the-way store has equal protection with the large buyer at the large store in the center of business.



ONE OF THE CLEAN GROCERIES IN GRAND FORKS

City Forestry Methods in a New England City

By William W. Colton

City Forester, Fitchburg, Mass.

IN the early days the city forester's duties were merely to trim and remove the old trees and sometimes to plant new ones, which were usually taken from some nearby pasture. The city forester of to-day, however, must be prepared not only to trim and remove his old trees but to seek to preserve them from the depredation of many pests which a quarter of a century ago were unheard of in this country. He must be posted on the life history of the various insects preying upon the trees; the numerous fungus diseases; the effects of the artificial conditions of our modern city life upon the trees and of the adaptability of certain species to varying conditions. It is necessary also to be able through artificial means, such as underdrainage, fertilization and methods known as tree surgery, to rejuvenate and prolong the life of city trees. He must have some knowledge of nursery work and be able to raise and transplant trees successfully.

Besides these things, it is becoming more and more essential that the forester shall have a general knowledge of practical forestry, that he may act in the capacity of consulting forester to the residents of his city, thus encouraging them to care for their own forests and forest lands, and also to establish and maintain in his city for the future welfare of its citizens a municipal forest.

Taking a Tree Census

Fitchburg is situated among the central Massachusetts hills, 50 miles from Boston. It has a population of 40,000, an assessed valuation of \$33,232,619 and a tax rate of \$19.60 per thousand. The township covers an area of 29 square miles, but the city proper stretches out over a length of some five miles, following the course of the Nashua River. A rise of 350 feet from the business to the residential section makes it a city of hills and healthy homes. It also makes street construction and the maintenance of shade trees difficult, as the streets are narrow and steep.

When the Park Commission first decided that the shade trees of the city needed more

care than they had been receiving, they determined also that they would combine the offices of Tree Warden, Moth Superintendent, and Forest Warden, create an office of Park Superintendent and employ a Forester to take charge of it all.

The first problem that confronted me when I accepted the position of City Forester was to make myself familiar with the city, its streets, its trees, parks, playgrounds, and, last but not least, its people. To accomplish this it was necessary to have an office where records could be kept, and then to get the records. The first was accomplished with the aid of the Commissioners and the Mayor. Our next move was to take a census, that is, to find out how many trees were located within the highway boundaries, which, in this state, makes them city property. At the same time we wished to obtain what information we could in regard to them, such as species, diameter, condition of tops and trunk, relative location as to curb or property line, particular diseases, etc. To do this, I constructed a field pad based upon the field notebook used by Mr. Solotaroff in East Orange, N. J., but differing in a few respects. An illustration of one of the sheets here shows how we used it.

The vertical lines on the right-hand side of the sheet represent the street, the outside lines being the highway boundary and the inner lines the curbing. Between the outside and inside lines would then be the sidewalk, and it is therefore an easy matter to show whether the tree stands on the property line, the curb line or in the middle of the sidewalk, as is often the case with us on some of our old streets.

In taking measurements on a street, we start at either end of the street, but always take the right-hand side going down on one side and coming back on the other. The data gathered are plotted on the left side of the sheet, beginning at the top. The small circle denotes the location of the tree, the figure to the right or left the number given it and the figures on the vertical lines between the trees the distance between. Where a

Sheet No. 322 Street Hartwell Date Sept. 25, 1911

| Tree No. | SPECIES | Diameter | Condition | | Gourd | REMARKS |
|----------|----------------|----------|-----------|-------|-----------|----------------------|
| | | | Top | Trunk | | |
| 12 | Sugar Maple | 19 | 8 | 7 | None | Cavity & Stubs |
| 13 | " | 18 | 9 | 8 | " | Inj Borers |
| 14 | " | 16 | 10 | 10 | " | |
| 15 | Am. Elm | 27 | 7 | 10 | - | |
| 16 | Sugar Maple | 16 | 8 | 9 | - | |
| 17 | English Elm | 25 | 9 | 9 | - | |
| 18 | Am. Elm | 24 | 8 | 10 | - | |
| 19 | Sugar Maple | 18 | 8 | 8 | " | Inj by Horse |
| 20 | Horse Chestnut | 19 | 8 | 7 | - | |
| 21 | Sugar Maple | 15 | 9 | 6 | Below Elm | Big cavity at base |
| 22 | " | 16 | 8 | 7 | B.P. | Wire bound |
| 23 | " | 18 | 9 | 6 | Wire | Bad Injury |
| 24 | " | 14 | 8 | 7 | Wire | Cavity, Wire Bound |
| 25 | Am Elm. | 24 | 9 | 10 | None | Big Cavity, W. Bound |
| 26 | Sugar Maple | 21 | 8 | 7 | " | Cavity, Wire bound |
| 27 | " | 21 | 8 | 8 | " | Cavities |
| 28 | Am Elm | 23 | 9 | 10 | " | |

A SHEET FROM THE FIELD PAD

tree stands near the corner of a street the letter "c" is attached to the distance to show that it is so many feet from the corner of another street. The figures on the outside edge, as No. 12, denote the number of the abutting property, and where there is no number the name of the property or owner is usually put down instead, as "County Court House" in the illustration.

In plotting the data in regard to the condition of the top and trunk of the trees we have used the figures 4 to 10 to denote different conditions, 10 denoting a perfect trunk or top, 9 very good, 8 good, 7 fair, 6 doubtful, 5 bad and 4 condemned.

Such notations as are considered necessary in regard to special defects are kept under the column headed Remarks.

In going over the city in this way a forester soon becomes familiar with his trees and conditions in general.

After the field notes had been taken, the data gathered were placed on cards especially prepared for the purpose. (See illustration.)

A Card Index of Trees

The cards were placed in files and indexed under streets. Whenever any work is done on a particular street, the foreman turns in a report of the time spent by each man on the tree he is working on and the kind of work being done, i. e., whether trimming, removing, chaining, or cementing, etc. The clerk then transfers the time and material in money-equivalent to the card for that particular tree. In this way we are able to learn the amount of money spent on each tree. This will eventually prove very valuable data, as in a few years it will be interesting to note the relative cost and effectiveness of various methods of work, as of closing cavities, for instance. The foreman's report slip used is especially constructed to cover the above detail and is shown here also.

To locate a tree definitely without knowing its index number, the foreman chooses the nearest cross street, counts from it and designates on his report what direction it is from the intersecting street and which

TREE RECORD.

Street HartwellTree No. 23.Sheet No. 322.

SPECIES

DIAMETER

PLANTED

REMOVED

Sugar Maple

18

Condition:—Sept.28,1911 Top 9,Trunk 6.

Guard:—Sept.28,1911 Boiler Plate. Removed 1912.
New Guard Oct. 1912. \$.70

Pruning:—Aug.22,1912. \$1.10.

Remarks:—Cavities, wire bound.Aug.22,24,12.\$8.53 Cement.

Unhaining and Bolting \$1.25.

side of the street he is working on. By referring in the office to the field sheet the number of the tree can easily be found and the amount of work transferred to the card of that number.

The convenience of having a card index of the trees, together with the set of field notes which is kept on file also, cannot be too highly prized. It makes it possible for one at a moment's notice to tell an inquirer just how much has been expended on any particular street for new trees, the repair and care of old ones, and many other

things. If a complaint comes in about a tree or a petition for its removal or replacement, you can, by referring to your field notes, tell the exact location of the tree in question, whether it is in good, poor, or bad condition, and whether there will be room for more trees. In other words, it saves you many hours of labor and gives you facts at first hand with which to meet requests or complaints.

After obtaining the necessary data in regard to our shade trees it was found that 1,927 trees were located on streets within

City of Fitchburg, Shade Tree Department

Daily Report

| MEN No. | STREET | SIDE | Tree No. | SIDE STREET | Direction Number | PRUNING | | Removed | Sawed | Cemented | Guard | REMARKS |
|------------|----------|------|----------|-------------|------------------|---------|-------|---------|-------|----------|-------|---------------|
| | | | | | | Dead | Live | | | | | |
| | Hartwell | | | | | | | | | | | |
| 3 | " | L | 2 | Elm | S | | | | | 4 1/2 | | Horse |
| " | " | R | 3 | " | S | 1 | 1 | | | | | Hire |
| " | " | L | 3 | " | S | 1 | 1 | | | | | Carting Brush |
| 7 | " | L | 2 | " | S | | 1 1/2 | | | | | 2 Hours. |
| " | " | L | 3 | " | S | | 1 | | | | | |
| " | " | L | 3 | " | S | | | | | 6 | | |
| 4 | " | R | 2 | " | S | | 3 | | | | | |
| " | " | R | 2 | " | S | | | | | 5 1/2 | | |

Refer to

Sheet No. 172

Date

Aug 22, 1912

Foreman

B. A. Dennis

the fire district and standing within the highway boundaries, thus being city property and under complete control of the department. Of the 414 streets covered by the census only 192 had any trees on them within the boundaries. Not all of these streets are bare of shade, however, as there are, besides the 1,900 trees above mentioned, about three times that number bordering the streets but standing back on private property and thus out of direct city control. The figures gathered on the 1,900

in favor of shade tree work. The fact that the protection of fruit and shade trees from the gypsy and brown tail moths is compulsory here had called to the attention of many people, especially property owners, the fact that the trees needed attention and cost money. This was not enough, however, and so the Fitchburg Branch of the Massachusetts Forestry Association was formed, composed of many of the leading men and women of the city. Through the efforts of this organization a fund was



TWO METHODS OF HANDLING THE GYPSY MOTH

- 1st, cavity in old apple tree cleaned out and covered with zinc, thus closing hiding place for gypsy moth;
2d, a large cavity filled with cement and cobblestones, forming a cheap and serviceable protection against the moth

controlled by the city, however, showed that they were made up of 41 species, with sugar maple and American elm in the lead, ranging in diameter from 1 to 43 inches. Of this number approximately 18 per cent were classified as perfect, 30 per cent good, 34 per cent fair, 12 per cent doubtful, 4 per cent poor and 2 per cent very bad.

This showed us two things; first, that the trees then standing were in immediate need of attention, and second, that our streets needed more trees.

In order to accomplish these results we needed money, and in order to get money it was necessary to arouse public sentiment

raised to be used by the Forestry Department in putting the trees on some particular street in the best possible condition obtainable under modern arboricultural methods, in order to show the people what could and what should be done to all the trees. Bulletins were also issued by this branch and distributed to the members of the city government and the citizens in general, setting forth the benefits of shade trees and the facts gathered in our tree census. As a result of this educational campaign the Fitchburg Woman's Club held a tag day for the benefit of the trees and turned the money collected over to the Forestry Associa-

tion for more work on the shade trees.

This work was carried out by our department, and as a result much more interest has been shown not only by the members of the City Government but by private owners of trees, many of whom are now having their trees cared for scientifically. It has resulted also in increased appropriations for shade tree work, and this coming year we hope to be able to do considerable work in reclothing our denuded streets with young trees.

A Municipal Nursery and Forest

For the purpose of obtaining new trees to plant on our streets a municipal nursery was established, which now contains over 5,000 young trees in various stages of growth and comprising some 40 odd varieties. It also contains about 600 shrubs and nearly 20,000 young pines for forest planting. It is our intention to utilize the nursery for more purposes than the raising of trees for street planting. Besides the raising of ornamental trees and shrubs for our parks, we are growing young forest trees to reforest the denuded portions of our water sheds and other public lands.

The city of Fitchburg now owns 947 acres of woodland or land adapted only to forest purposes. The control of this land is at present divided between four departments, but all are coöperating to develop the land under practical forestry methods. Of the above-mentioned area, 60 acres have been cut clean, 71 acres thinned under expert supervision, and 84 acres replanted, with a total of 95,000 trees.

The cutting operations have been carried on at a cash profit to the departments of \$4,332.29. Outside of the cash profits derived, however, it has been a great advantage to both the Water and Park Departments to have this work, as it enabled them to keep their good men employed the entire year by using them on this work during the winter. A good deal of the lumber and cord wood derived was also used by the departments, thus saving them a considerable expense.

Besides the forestry work done by the city, considerable interest has been shown by private individuals, and a total of 73,000 trees have been set out on plantations within the city limits. The interest in this work is not confined to the city itself, but has spread to the surrounding towns, and we



PROPERLY PRUNING AND TREATING A STREET TREE

Trimming crew at top of 36-foot ladder; foreman at foot

can boast of being the center of a district that has done more in reforestation work than any other part of New England.

A project is now on foot, and at the present writing seems very likely of fulfillment, to have an area of 300 acres turned over to the Forestry Department to be held and worked as a municipal forest, where a definite amount of wood will be removed each year on a rotation basis. It is estimated that we shall be able to furnish enough wood to supply the schools, public buildings, Poor Department and other departments, besides selling enough outside to make a considerable profit for our own department. More land will gradually be added and either the cutting area or the rotation increased in proportion until we shall be able to harvest and market enough wood and lumber to maintain our Shade Tree Department and possibly our small parks at no cost to the city.

WHAT TO DO AND HOW TO DO IT

How to Improve or Conserve Your Public Water Supply

By George W. Fuller

Consulting Hydraulic and Sanitary Engineer, New York; Chairman, Committee on Water Supplies, American Public Health Association

A SATISFACTORY public water supply should be of safe hygienic quality; of good appearance as to absence of mud, vegetable stain, grosser microscopic organisms, soluble and suspended iron, and also free of offensive tastes and odors, excessive hardness and abnormal corrosive action on service pipes.

Until some 25 or 30 years ago, when the germ theory of disease became well established among the medical profession, and when it became known that typhoid fever, diarrheal and some other diseases were transmitted by water, comparatively little attention was paid to the hygienic aspect of public water supplies. Not only was a majority of the water supplies sewage-polluted, but most of those drawn from rivers, lakes or artificial reservoirs were unclean in appearance and frequently they possessed highly offensive tastes and odors.

Ground water supplies have not been so successful or numerous in this country as in France or Germany, although a larger number of small communities derive their public water supplies from relatively deep wells. Many of these are seriously objectionable owing to the hardness of the water, and others on account of the iron which the water contains in dissolved form, so that it precipitates as iron rust when it reaches the consumers, to the detriment of its use in the household and for many industrial purposes.

A dozen years ago or more, typhoid fever death rates of 50 to 100 per year per 100,000 population were very common in this country, and a community having a typhoid fever death rate of 20 to 25 per annum per 100,000 population was considered to have a reasonably good water supply.

The introduction of water filters, with their various appurtenances, by some 400 or more of the cities and towns in America, has shown that there was in earlier years a terrific loss of life that was entirely needless. This statement is based not only upon the reduction of typhoid fever death rates in numerous communities which have adopted filtration for existing water supplies or have secured a new supply from a better source, but it is also related to the general improvement in the public health of such communities, as evidenced by the general death-rate and by the death rate from disease in many cases not hitherto recognized as water-borne diseases. Prof. Sedgwick has pointed out that deaths from tuberculosis, diarrhea, gastro-intestinal disorders, pneumonia, bronchitis, and, especially, infantile diseases have markedly decreased in several communities where a good water supply has been substituted for one that was seriously polluted.

Clean water is a great boon to a community owing to its advantage not only in the household but in various industrial establishments as compared with the muddy, highly colored, foul-smelling waters so frequently supplied for many weeks and months in the year.

Soft water is also helpful, and in many places is worth far more than its cost to a community.

Modern purification works, which will improve muddy, highly colored, foul-smelling water supplies, can ordinarily be installed at a cost of 25 to 30 cents per capita per year where the volume of water consumed per capita is moderate. This figure includes interest charges, depreciation, operation and maintenance. It has to be in-

creased somewhat for very small plants and for some fairly large ones where the unfiltered water is muddy or where softening is resorted to.

The above average cost to the consumer is not the net one, because a proper water supply saves many householders the cost of bottled waters; and the use of household and industrial filters, with their attendant cost, is also eliminated.

Initial Data

One of the first things to do for those in charge of public water supplies of questionable character is to secure all the data locally available to throw light on the quality of the water supply, especially in its relation to public health and also with respect to its physical characteristics, many of which can be secured without great difficulty. This is particularly true as to its turbidity, which can be approximated by testing the water in accordance with the directions of the United States Geological Survey.

Chemical and biological data are desirable, but in many cases the water is so obviously polluted by sewage and so muddy and offensive in other ways that it requires no expert knowledge to show that the water in question does not conform to the requirements set forth at the beginning of this paper.

In some cases it is not a simple matter to ascertain what the degree of shortcoming is of a water supply, due to the lack of local records, and possibly also to the infrequent periods of short duration when the supply is seriously defective. Under such circumstances the best thing to do is to consult someone who is thoroughly informed in regard to such matters. The latter step in particular is necessary in order to determine what the best steps are towards the improvement of the water supply and what would be the cost of such improvement.

It is wise to have the initial steps carefully considered, in order to formulate a plan of procedure which can be put before the community, so as to allow the taxpayers to form an intelligent opinion as to what the proposition of improved water supply really means from all angles. In the absence of such a well-formulated program serious differences of opinion are likely to arise, and frequently such differences needlessly lead to personal exploitations and

political log-rolling that is disastrous to the public health and the welfare of a community.

Methods of Improvement

This short paper is not the place for a detailed description of water purification methods. It is sufficient to say that sand filtration and mechanical filtration are now on a well-established basis from the standpoint of efficiency and economy both in construction and in operation. Mechanical filters have rapidly come to the front during the past few years and are particularly applicable for waters which are muddy, colored or require softening. Indeed, their suitability exists for all water supplies.

Sterilization by hypochlorite of lime or other oxidizing chemicals has proven a great boon in the improvement of waters of unsafe hygienic character. It is not to be understood, however, that sterilization can be relied upon for destroying bacteria uniformly in all unfiltered water supplies. Neither has it any significance whatever in freeing water from turbidity, color, objectionable tastes or odors.

Softening water supplies is accomplished with the use of lime or of lime and soda. While it involves more expense than simple filtration, it produces results, such as at Columbus, Ohio, and Grand Rapids, Mich., which are considered an excellent investment by the water users.

Aeration is a helpful factor in the removal of tastes and odors, particularly when combined with filtration. Aeration and filtration in specially designed filters provide also a means of removing iron from ground waters.

The corrosive properties of some waters, as shown by their dissolving action upon pipes, can be corrected by the proper use of small quantities of lime or soda.

An examination in the technical papers of the published accounts of various modern water purification plants installed in recent years shows that there is a substantial difference in the detailed arrangements, which of necessity arises, due to differences in local conditions.

A community ordinarily will find it economical and advantageous not only to secure the opinion of experienced advisors in taking the necessary preliminary steps in adopting and financing waterworks improvements, but also to follow their recom-

mentations as to manner of installing and operating the works.

There is no such thing as a standard, "ready to use" purification procedure which will serve as a cure-all for the wide range which exists in shortcomings of municipal water supplies.

Conservation

Generally speaking, it is wise to secure as good a quality of water at its source as it is feasible to obtain, notwithstanding that purification methods are applied or will be in the near future. On the other hand, it is not justifiable to attempt to secure, at enormous expense, an unpolluted source of supply when at moderate or relatively small cost a satisfactory water supply may be obtained from sources near at hand in connection with efficient purification.

The conservation of the quality of public water supplies, while desirable within reasonable limits, has seldom, if ever, proved an efficient substitute for a modern filtration plant. Unquestionably there are some instances where large water supplies are impounded for many months, and perhaps years, where the hygienic quality is moderately well conserved. Even reservoirs of large size, however, are subject to "overturning," due to temperature changes, are stirred up by wind action, and the composition of the water is seriously deteriorated by the soil washings from the watersheds at times of flood-flows. At such times and under such conditions the beneficial effects of sedimentation and storage in large reservoirs are greatly lessened.

Conservation of quantity of water is of much significance in some communities where the waste of water assumes enormous proportions. It is not difficult to find instances where the pumping costs, due to the waste of water, are greater than would be true if a moderate quantity of water were both purified and pumped for all reasonable use of the consumer.

It is poor business on the part of any municipality to pay for the pumping and purification of water which is never to reach the consumer, or which is destined to be needlessly wasted by him. Two of the chief causes of water waste are leaks and carelessness. In many cities investigation has shown that losses due to leaks in mains can be readily detected by the use of the proper appliances for that purpose. To re-

duce carelessness on the part of users the installation of water meters is a method of proved effectiveness. On an unmetered water-supply system most of the consumers must pay higher rates than would otherwise be necessary because of the wastefulness of their less conscientious or less thoughtful neighbors. Meters not only result in more equitable rates for all, on a proper schedule of charges, but also bring about a reduction in waste which may be an important factor in avoiding water famines or in postponing for years the need for an enlarged water-supply system in a growing city.

The general health laws of a state, and particularly the special laws applicable to the patrolling of certain watersheds, have much to do with the success of conserving the quality of water supplies taken from fairly small streams. These laws vary widely in different states, but in all cases there are limitations to the success with which they can be reliably executed every day in the year. In some instances, where the population is very scattered and where a watershed is small in area, sanitary patrolling has proved of much benefit. Its efficiency decreases with the size of the watershed and the population thereon.

The quality of a water supply can be conserved in some instances through the purchase of all the land which discharges its runoff or rainfall above the point of diversion of the water supply in question. Naturally, this idea is applicable for only comparatively small watersheds, as the cost of the land purchased on large watersheds would be prohibitive. Even in the case of some of the recent large water supplies taken from mountain sources for British cities the water is filtered, notwithstanding that all or nearly all of the land is owned by the communities developing the water supply.

In this connection it is to be borne in mind that the conservation of the quality of a public water supply at its source is always limited by the possibilities of fishermen, huntsmen and other random visitors to the watersheds, some of whom may be suffering from typhoid fever or some other intestinal diseases. "Typhoid carriers" in particular could make much trouble without themselves or anyone else being aware of the menace which their presence on the watershed would constitute to the water consumers.

Reference here should be made to the practice of taking drinking water supplies from relatively large flowing streams which receive the sewage from neighboring communities above a given source of water supply. Such a water supply should unquestionably be well filtered. Possibly it might be necessary to double-filter the water and even to give it additional special treatment. Some streams are too polluted to serve as a source of water supply unless the sewage entering the stream above should be thoroughly purified.

The question of conserving the purity of flowing streams is a many-sided one. It brings up matters of relative cost, but it is clear that water purification is a more important step in the interest of the public health than is the purification of sewage within certain limits. These limits are exceeded in some cases, and sewage purification and sterilization are imperative.

Each valley presents special problems

which cannot be properly solved without studying all of the public health aspects involved and without considering the sanitary laws and economical features applicable to the district.

Management

Public water supplies cannot be maintained in an efficient condition without proper supervision, and this applies not only to unfiltered, but also to filtered or purified water supplies.

One of the gratifying features in the recent rapid development in the utilization of modern water purification plants has been the installation of laboratories where the men in charge operate the plant with the aid of suitable analytical tests. Technically trained filter operators are a splendid investment for a community, and frequently save their cost in other ways than by the added safeguard which they give to the public health of the community.

A Map of Communicable Diseases

By Louis A. Dodge

THE system of recording cases of communicable diseases used by the City Board of Health of New Orleans was suggested to the late Dr. S. L. Theard, of New Orleans, by the pin and map systems used in recording the movements of commercial travelers.

The city map has been divided into thirty-one sections, blue prints being used. Each of these sections of map is laid flat in a shallow drawer in a filing case. Whenever a communicable disease is reported to the health authorities, its exact location on the city block is indicated by means of a pin with a colored head. Red-headed pins are used for scarlet fever, gray for diphtheria, purple for typhoid, pink for measles, brown for smallpox, etc.

When a patient under the surveillance of the health authorities recovers from the disease, the pin remains, but a white bead is slipped under the head to indicate recovery. Should the case result in death, it is indicated by a black bead. If a patient should be removed from his residence to a hospital, the removal is indicated by a blue bead under the pin head. There is a sep-

arate drawer for the Charity Hospital and separate inserts on the maps for other institutions where many diseases may be under treatment.

At the end of each year all the pins are removed and a new record made of whatever cases may be reported or under treatment at the time.

Besides the pin record, there is a cabinet in which there are a card index by wards, with the history of each case, a separate drawer for schools, a card index by streets and an alphabetical index of the names of patients.

Any resident of the city wishing to learn the health condition of any neighborhood can go to the office of the City Board of Health and with a glance at one of the drawers observe just how many cases of communicable disease exist, if any, on any particular square or in the entire neighborhood or ward. In this manner the system has proved of much benefit to persons desiring to live in healthy neighborhoods, in addition to its practical value and convenience in the work of the local health board.

Dignified Public Buildings



THE ART MUSEUM, TOLEDO, OHIO



THE SPRINGFIELD (MASS.) MUNICIPAL GROUP

The Making of a City Charter

By H. S. Gilbertson
The National Short Ballot Organization

ONE of the largest and most progressive cities of the Far West is operating under a commission government charter, of which the Mayor of the city recently said "it was compiled by a bunch of men who did not know what they were trying to do and who compiled it with a paste pot and a pair of scissors." The city is enjoying some of the benefits of commission government, but it is also suffering some disappointments that might have been avoided. Had the charter been drawn in a truly scientific way, the reputation of commission government as a solution of municipal ills would at the present time be somewhat better in that city than it is.

In another still larger city in the Middle West, where commission government was recently adopted, the framers of the charter set to work and not only defined with the utmost detail the organization of all the city departments, but gave the responsible members of those departments exact instructions as to just how they should conduct their offices for years to come. And this is a city in which the process of charter amendment is more than ordinarily difficult.

These two cities illustrate the prevailing custom in the framing of charters. In the home rule states an election of charter commissioners or freeholders is held. These men are given a few weeks in which to frame what amounts to the constitution, or more or less permanent law of the city. They are expected to get down to fundamentals. These boards are composed of prominent business men and usually one or two labor representatives. It is always assumed that one, at least, of the lawyers on the board, because he is a lawyer, is perfectly well qualified to sit down and put into workable legal form the ideas which are determined upon by the whole body. The remaining members of the board sit by and criticise his work, generally from an entirely local and amateur point of view; they don't pretend to any great wisdom on the subject under discussion.

Of recent years these boards of charter freeholders have made an important advance, in that they have been inclined to seek information from the outside by writing general letters to the public officials of

various cities which have been operating under various types of government or have been confronted with special problems in which the charter committee is interested. Of course, the answers are biased, and local in their application. But with this slight equipment the board goes ahead and frames its document. The city adopts the charter. A few months later it is found that, instead of being an instrument to facilitate the work of the city, it is in many particulars a very troublesome obstacle. Further experience reveals more obstacles. Year after year amendments pile up, and soon the charter takes on the heterogeneous character of a club sandwich. Ultimately the city begins back at the beginning and goes to the expense and trouble of drafting another new charter.

What is at the bottom of all these difficulties?

Well, in the first place, the actual framing of the charter is not something which any man on the street can do. It is not even a lawyer's job. In fact, the average lawyer has a training which in some ways makes him peculiarly unfit for this work; his work in private practice, let us say in the drawing of wills or contracts, gets him into the habit of drawing arguments in detail. He is prone to use the jargon which has a certain sanctity to lawyers and a certain mystery to the ignorant, but is simply an annoyance to the person of general intelligence. If he is a lawyer and nothing more, he has no knowledge or appreciation of the forces which control the mechanism of a city administration or of the human elements which go to insure effective popular control.

In the second place, the local point of view is not sufficient if the city expects to bring itself into line with the best experience of cities throughout the country. The benefit of such experience can hardly be obtained through general correspondence by persons who have not, to begin with, a sufficiently intimate knowledge of the subject of charters and municipal technique to ask the questions which will bring out the answers which will be valuable to them.

It is of the utmost importance that the drafters of the law should be able to dis-

tinguish what is purely local and what is fundamental and universal. For example, take the two cities of Newark and Los Angeles. Their populations are nearly equal. On the basis of this one fact many charter framers would be inclined to accept the charter of one as a guide in making a charter for the other. But no two cities in the United States, perhaps, are more radically different. The population of Newark is predominantly industrial in its pursuits and largely of foreign birth or descent. The population of Los Angeles is composed largely of transplanted Middle Westerners, and the industrial interests of the people are subordinate. In working out charters for these two cities one would have to take into consideration these psychological and sociological factors in each case, especially in planning a way to enable the people to control their government in the first instance. Newark also has problems of housing, sanitation and poor-relief which the average Los Angeles citizen cannot appreciate. So that very little can be gained by an offhand comparison of the two cities.

What, then, would be suggested as an alternative to the current methods of charter-making in American cities? For an answer I would point to the work which is being done at the present time by the Tax Association of Alameda County in Oakland, Cal. Two years ago this organization began in a very quiet way to investigate all the county offices, with a view to seeing where the county's money was going. Before they had gone far into this work they discovered that before any real economies could be worked out there would have to be some radical changes in the county govern-

ment, so as to fix responsibility for results. Studying the subject still further, they found that not only would the county government have to be changed, but that in order to eliminate a great many duplications of authority and work there would have to be simultaneous changes in the charters of the different cities in the county. Laying its plans months ahead, the Tax Association has gone to the Legislature and secured the passage of a constitutional amendment which will permit the adoption, in a general way, of a charter such as it wants. The step which they have just undertaken is the raising of a fund of \$50,000 in dollar subscriptions, the responsibility for which will fall upon about one hundred local allied associations. With this fund the Tax Association will hire experts to examine in detail the county and city offices and the whole city and county problem. In the meantime, it is planned to keep the citizens informed of every step in the undertaking—in fact, to make every citizen a partner in the enterprise. When all the data have been gathered and a general plan of county government has been agreed upon, the Tax Association will petition the county supervisors to call a charter convention under the home-rule law. The work of the charter convention will last for a few weeks, as the law provides; but this work will be comparatively simple and will amount merely to putting into legal form the conclusions which have already been fully determined upon after a painstaking investigation. In other words, the act of drafting the charter will be the *climax* of a civic movement and an expert investigation instead of a leap into the dark.

An Open Letter to a College Graduate

By Dr. Frank Crane

In the New York "Globe and Commercial Advertiser"

MY Dear John: You are about to graduate from your college. You write me asking what I think of your entering the ministry. You say you are happiest when you are doing good to people, that you long to devote your life to helpfulness. You do not care for business. You are an idealist.

I know your blood; it is clean and sound.

I know your childhood training; it was the very best a Christian home could give you, with the examples of an upright father and a devoted mother. Now you are finishing your four years at college. So you have all the force of a carefully bred and trained American youth, which you are ready to throw into the world struggle.

Naturally the ministry appeals to you.

For many centuries the only business a man of thoroughly religious convictions, of intense altruistic impulse, could choose has been the Church. I do not wish to be construed as saying one word against preaching or the noble body of men who follow that calling.

But I am going to lay before you another opening, a calling, a profession which, to my mind, needs you more, and such as you. It is POLITICS.

Politics needs the college graduate more than any other business needs him.

You can help the poor, the criminal and the fallen in two ways: one, by treating the individual case; the other, by removing the evil conditions that produce such cases. Is not the second a hundred times more important than the first?

Read your Bible in the light of the twentieth century, with the eyes of a modern American. Then do you not see that our problem now is not merely to rescue the individual sinner "as a brand from the burning," but to PUT OUT THE FIRE? Is it not better to sprinkle ashes on the slippery sidewalk than to stand around and help those who fall?

Under old-world monarchical institutions ancient fraud was so intrenched that the people were helpless; all they could do was to minister to the wretched victims; so they gave alms to the poor and preached resignation to the unfortunate. But the great fact of this age is that we can do away with those frauds and remove injustice; that the people themselves can put righteousness into government.

Here, my boy, is the cry from Macedonia: "Come over and help us!" Compact bands of criminals are controlling cities, driving women to shame, men to drunkenness and crime, little children to benumbing labor. If you want to fight, come and help fight here.

The prodigious wealth of the country is drifting into the control of a few irresponsible hands; come and help us get hold of this wealth-power and use it for the children of the people.

We want schooling for every child, we want clean lodgings for the poor, we want honest public officials, we want a decent wage for every worker, we want quick and substantial justice for every man. We want to REMOVE ALL ECONOMIC PRESSURE THAT DRIVES HUMAN BEINGS INTO VICE. To

get this we want the sincere, honest POLITICIAN.

I do not imply that the millennium can be brought in at once by politics. What I mean is that politics is the intelligent functioning of the whole people. Hence it is far more effectual to get the principles of Jesus into First Ward politics than it is to save a few human wrecks, because it is ward politics that is making human wrecks.

No doubt the ministry appeals to you as a sheltered, safe career. In it you will be protected by your cloth. Your mother and your teachers will breathe a sigh of relief when you enter the sequestered calling. But if you want to fight, to get into the game, come down into our ward and you'll find your hands full.

Bring your clean body and trained mind, your strong, devoted soul and your ideals here. These things are not given you for you to pack yourself in antiseptic cotton, but to grip the world with.

Your Master did not look for a safe job. He did not dwell in the temple. He was a friend of sinners. They even called Him "a man gluttonous and a wine bibber, a friend of publicans and sinners," because He did not choose to consort with "nice" people.

I say no word, I repeat, against the Temple and them that serve there, but I present to you the STREET.

It is noble to save souls, but I present to you the business of preventing souls from being lost.

It is noble to preach the Gospel to every creature; I present to you the task of preaching the Gospel through the organization of democracy.

It is noble to go as a missionary to foreign peoples; I present to you the task of keeping this city and country from being a place of damnation to the foreign peoples flocking hither.

Come! We don't offer you a cosy corner and an easy career. We offer you slander, scorn, danger, the malice of the enemies of society, the cruel hate of selfish wealth, the sneers of the predacious boss, wounds, heartache, failure perhaps, and possibly death.

But the country has educated you, equipped you. It needs you as it needs the soldier in war. Come into the firing line, right here in this ward, where it's hand to hand with the wild beasts of selfishness,

ignorance and greed. Come with all your magnificent Christian character, and you can enter the lists of POLITICS with the words of your Master on your lips.

"The spirit of the Lord is upon me, because He hath anointed me to preach the

gospel to the poor; He hath sent me to heal the brokenhearted, to preach deliverance to the captives and recovering of sight to the blind, to set at liberty them that are bruised, to preach THE ACCEPTABLE YEAR OF THE LORD."

Civic Work of Commercial Organizations

The Winston-Salem Plan of Training Boys for Citizenship

By LeRoy Hodges
Petersburg, Va.

TRAINING boys for the obligations and responsibilities of citizenship has been undertaken in Winston-Salem, N. C., along rather broad and unique lines. After nearly a year's successful operation the Winston-Salem plan is worthy of careful consideration, and possibly of imitation. The principal characteristics of this plan are: First, coöperation between the public schools and the local Board of Trade; second, the establishment of a department of government and economics in the city high school; and, third, the formation of a boys' department, or a Juvenile Club, as it is called, of the Board of Trade.

Work in the High School

At the beginning of the 1912-1913 school year, Superintendent R. H. Latham of the city schools, provided, as a part of the high school curriculum, a course in government and economics, open to the senior students, and placed the new department under the direction of the secretary of the Board of Trade, who, with the approval of the board, had volunteered his services. Under this department, the students are taught the elements of government, special attention being given to analysis and comparison of the city, county, state and federal governments. During the term ending with the Christmas holidays, mock elections were held, and the class was organized as city council, state general assembly, and as the Congress of the United States.

Immediately after Christmas a series of lectures treating of the fundamental principles of economics was arranged, and the attention of the students was directed to the important industrial, commercial and agricultural problems of this country, particularly the problems of the southern states.

As a result of this work the boys developed a very active interest in public affairs. To hold this interest, and at the same time make the work of lasting value, it was recognized that their historic and theoretical study of political and economic problems must in some way be connected with the practical, every-day experiences in the industrial centers. Winston-Salem being essentially a manufacturing community, the means of studying actual conditions was immediately available. As a feasible method of undertaking this it was suggested that there be organized a Juvenile Club of the Board of Trade, and the establishment of a closer coöperation between the work of the high school and that of the board.

The Juvenile Club

Having declared that "No commercial organization performs its legitimate functions unless it makes an effort to inculcate the principles of true citizenship in the minds of its members and to advance the social conditions of the people always ahead of the march of industrial and commercial progress," the Board of Trade readily endorsed this plan to form a boys'



JUVENILE CLUB OF THE BOARD OF TRADE, WINSTON-SALEM, N. C.

division of the board, and authority was given the Secretary to undertake its formation.

Membership in the Juvenile Club is not limited to high school boys, for it was thought best to open to all interested boys of the city a way to become identified with constructive and active civic work. To become a member of the club, however, the boy must be at least 14 years of age and under 21 years old. Another condition of membership is that the boy must subscribe to and recite from memory, before the Secretary of the Board of Trade, the ancient Athenian oath, pledging himself to perform faithfully his civic obligations. This pledge is as follows:

"We will never bring disgrace to this, our city, by any act of dishonesty or cowardice, nor ever desert our suffering comrades in the ranks; we will fight for the ideals and sacred things of the city both alone and with many; we will revere and obey the city's laws and do our best to incite a like respect and reverence in those above us who are prone to annul or to set them at naught; we will strive unceasingly to quicken the public sense of civic duty. Thus, in all these ways, we will transmit this city not less, but greater, better and more beautiful than it was transmitted to us."

A membership register is kept in which the boys sign their names after subscribing to and reciting this oath. The Club has a membership of about fifty boys, the first member being enrolled October 14, 1912. No fees are charged.

The boys have the privilege of attending all regular meetings of the Board of Trade, with the right to take part in debates, but without any voting power. They are assigned committee work, and special meetings are held for them twice a month, or more frequently if the work demands it.

The first employment of the members of the Juvenile Club has been in the recent industrial survey of Winston-Salem, conducted by the Board of Trade. All of the boys selected to assist in this work were students in the department of government and economics of the high school. In this way the boys in the graduating class of the high school this year have been able to take part in an organized industrial investigation under proper authority.

In this work the boys visited the local manufacturing establishments and filled out a detailed industrial schedule, in the same manner as do special agents of the statistical bureaus of the federal government. They were held strictly responsible for the accuracy of their reports, and statistical tables of considerable local value have been compiled directly from their reports.

Every effort is made to train these boys properly for the duties of citizenship; to create in them respect for honest and efficient public service, and to interest them actively in the work of making Winston-Salem a better, greater and more beautiful city in which to live.

CIVIC WORK OF WOMEN'S CLUBS

The Tampa Civic Association—Its Aims and Work

By Elisabeth Askew

Secretary, Tampa Civic Association, Tampa, Fla.

FROM its inception, nearly two years ago, the Tampa Civic Association has endeavored to bring about the unification of the improvement forces of the city. Awakening the civic consciousness and turning the attention of a community from a purely commercial development to the cultivation of higher ideals of civic life and beauty has been no small task. But the publicity campaign waged by the Tampa Civic Association for the improvement of home and town surroundings and the betterment of living conditions has made itself

felt from the beginning, and the influence of the Association has grown steadily until its aid is asked by city officials in promoting interest in municipal improvements.

Believing that volunteer organizations should not undertake work properly belonging to the municipality, we have directed our efforts toward creating a public sentiment that will support the various departments of the city government in a proper performance of their duties, and have at the same time endeavored to enlist active coöperation on the part of citizens



THE CLUB HOUSE WHICH THE CITY OF TAMPA GAVE TO THE WOMEN



TWO VIEWS OF FRANKLIN STREET AT THE CORNER OF LAFAYETTE STREET, IN THE HEART OF TAMPA

The small view was taken in 1890, when the street was unpaved; the larger view, taken in 1913, shows the vitrified brick pavement and a portion of the Great White Way

and residents—men, women and children—in a careful observance of ordinances whose purpose is the conservation of the health of the community.

How the Campaign Began

We began active work by securing the coöperation of city officials, the press, commercial organizations, leading citizens, the housekeepers and children of the city in a municipal clean-up, during which sidewalks, brick and stone facings and columns of buildings were scoured and scrubbed until the accumulated ancient grime yielded to the enthusiastic application of soap-suds, and put on the sheen of spotless cleanliness. To the astonishment of the public and the discomfiture of some prominent citizens the anti-spitting ordinance was resurrected and enforced. An honor roll for participants in the clean-up was established and published in the local newspapers; blue ribbons were awarded for the most spotless sidewalks and premises in the business section of the

city, and a cash prize was offered for the neatest-kept tenement premises during the year. This prize was awarded on the occasion of the second annual clean-up and produced a marked improvement in the appearance of the entire block in which the prize was won.

The work of the Association has been carried on by special committees under three main departments.

The department of public health and sanitation has conducted two clean-city crusades, the result of which has been the improvement of conditions in both private and public premises, greater interest and activity in the municipal inspection of dairies, bakeries, restaurants, meat markets and other places where foodstuffs are offered for sale, and the promotion of interest in bonding for an adequate up-to-date system of sewerage.

The playground department has celebrated two May festivals or play pageants, and has given a number of entertainments

to promote interest in the establishment of municipal playgrounds which shall provide safe and happy recreation for the children under organized leadership. This department has also carried on an educational campaign for the teaching of practical civics in the public schools, the forming of junior civic clubs, the encouragement of school and vacant lot gardens and the use of the schoolhouse as a recreational center for adults and children in each school district.

The Court House Square

From the beginning of the organization, the out-door art department has carried on an active publicity campaign for the improvement and beautification of home and community surroundings. The first public work undertaken was for the improvement of the court house square. The condition of this square in the heart of the city, to quote the words of one of our commissioners of public works, had been "a blot on the landscape for twenty-five years, and would have remained a blot up to the present time, if the Association had not gone to work for its improvement and beautification."

The transformation wrought in the appearance of this square is considered by many of our citizens and visitors to be the greatest civic improvement made in Tampa. Credit is due to the local chapter of the Daughters of the Confederacy, which erected a handsome monument on one corner of the square, and to the out-door art department of the Association, which stuck to the work in the face of much discouragement until the plans prepared and submitted by its chairman to the board of county commissioners for the laying out of the grounds and beautifying of the square were adopted by the board and carried into effect through the employment of a competent landscape gardener.

The out-door art department also voiced an effective protest against the destruction of shade trees, and prepared a law for the planting and care of trees for which it has worked up a public sentiment that will insure the passage of the necessary city ordinance providing for a street tree commission. This year this department will inaugurate a flower market as an annual feature of its work. Public lectures illustrated by moving pictures have been given

and have proved the most popular means of creating interest and arousing enthusiasm in the city beautiful movement.

Through the better organization of district committees with street and alley supervisors the work of each department of the Association will be made much more thorough and efficient this year.

Stimulating Lectures

We began the new year by inviting the housekeepers of Tampa to hear a lecture on "How to Recognize Pure Foods," given at the Tampa Bay Hotel by Prof. Joseph P. Remington, which was appreciated and enjoyed by a large and representative audience of Tampa women.

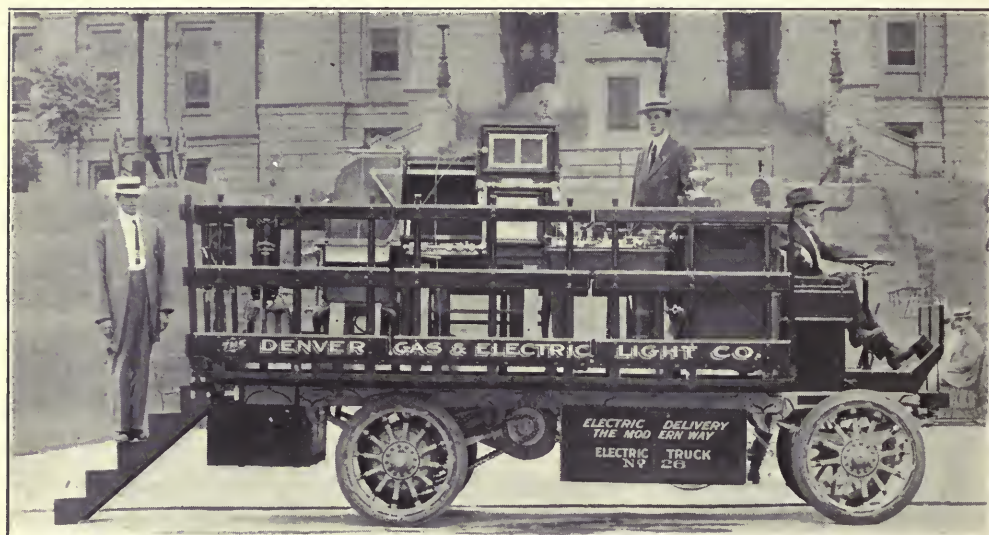
We have recently held a public meeting which was addressed by the Mayor and Commissioners of Public Works, and have also had the advantage of a number of lectures by Mr. Henry C. Long, of Boston, the engineer who has been engaged by the city of Tampa to lay out the plans of the estuary and city docks.

In addition to his work in planning the harbor and docks, Mr. Long has lectured before various organizations in Tampa, and has endeavored to bring the various conflicting elements together, to stir the imagination and pride of the people and awake the civic consciousness to an appreciation of the large possibilities here for a great harbor, a great commercial center and a wonderfully beautiful city.

Tampa is a young city with an old name, and possesses a history that dates back to the discovery of the harbor which afforded safety and a welcome landing-place to the intrepid explorers Narvaez and DeSoto over 400 years ago. With unusual advantages of geographical situation, surrounded by great natural beauty of river and bay enhanced by a wealth of graceful tropical foliage, and possessing the charm of a matchless climate and a distinct individuality, Tampa should attain a remarkable development.

The city government of Tampa has conferred a unique honor upon her progressive women in giving them a women's club building for the use of the women's organizations of the city, a commodious and handsome home situated on the river bank amid the beautiful gardens of the city park, which is used and enjoyed every day in the week by the women's clubs of Tampa.

Varied Uses of Motor Trucks by Municipalities, Contractors and Public Utility Corporations



BAKER ELECTRIC GENERAL SERVICE WAGON IN USE BY DENVER GAS AND ELECTRIC COMPANY



ANDERSON ELECTRIC POLICE PATROL WAGON, WITH MOTZ TIRES, USED BY MEMPHIS, TENN.



SAURER TRUCK LOADED WITH GARBAGE AT A NEW YORK DUMPING PIER



THE SAME TRUCK DISCHARGING ITS LOAD INTO A BARGE WITHOUT LOSING ITS CENTER OF GRAVITY



A Club That "Studied America"*

By Zona Gale

BECAUSE a thing done, however slight the thing or slightly expressed, has a value distinct from even the most perfect theory, it may be well to tell how first the women, and then the men and women of one town, inaugurated civic work. This town is one of six thousand inhabitants, and the initial step was taken by a woman's club, which gave over studying foreign countries and decided to study America.

At first, one hour of each weekly meeting was given to a paper and readings by a club member, on some phase of present-day America; and twenty minutes to a discussion of the present working out of some civic or social problem looking to the future of America. The latter included news about conservation and reclamation, the national fight for health, pure food, play, peace, eugenics, equal suffrage, workmen's compensation laws, children's gardens, tuberculosis prevention, modern prison methods, public fountains,—the program committee simply reached out blindly into the field and took what first presented itself. Perhaps this, approximating as it did to a rough survey of the field from very far off, was as good a way as any. At all events, the result was that the next year the club's whole time was given to a study of civic and social topics, presented by the members.

Then something became evident, which was a kind of revelation about civilization. It was found that, as these matters of national importance came up for consideration, most of them had a distinctly local application.

"The Playground as a Part of the Graded School Course of Instruction" called for a discussion of the need and ex-

pense of a local playground. "Conservation and Reclamation" brought on questions about curb tree-planting and parking and the local ordinances about cutting down and replacing. "Jails and Lock-ups" resulted in an investigation of the local jail and calaboose bedding, and the local mode of procedure when boy offenders are brought before a justice. "The Drama: Modern Dramatic Aims and Methods" was made to include "The Winter's Offerings in Small Towns and How to Get Better Plays," and "Local Nickel Theaters." To "Women in Industry" was added "Women in Local Industry: Hours, Rules, Wages." "Parks" suggested the possible development of two local vacant triangles, and their appropriation to the common use.

The Call for Team-Work

It was the incongruity of a small club, with a limited membership, considering alone problems which directly interested six thousand folk, which led to the next step.

The club called a general meeting of all the *women* interested in town development. Every woman's club was invited, and a general invitation was extended through the papers. The meeting was held at the City Hall, and these were asked to be present and to speak as follows:

The city health officer, to explain the vital need of sewerage and the desirability of a garbage-disposal system, and what practical means could be used to get both.

The school superintendent, to tell of the advantages of manual training and domestic science in the local schools.

The art teacher in the schools, to tell how the local school grounds could be inexpensively improved and made beautiful.

A woman who loves gardens, to tell of the joy in gardens and in planted spaces.

*From a pamphlet entitled "Civic Improvement in the Little Towns," published by the American Civic Association.

A club member, to tell of the work of the American Civic Association and of the work of children's gardens and the penny seed packages.

A woman interested in pure milk, to tell of the dangers of tuberculosis existing in uninspected herds, and how a town can go about securing the tuberculin test of its cows, in order to know of the purity of its milk supply.

Eighty women were present at this meeting, and the following week a meeting was held to effect a permanent organization. The constitution of the Wichita (Kansas) Improvement Association was adopted, with modifications suiting it to the smaller society, and the work was mapped out for five standing committees, whose chairmen, with the officers and five appointive members, made up the executive board. The committees were: Sanitary, Educational, Art, Children's Auxiliary, Streets and Alleys.

A Membership Committee was also appointed to solicit new members, the society's revenue consisting only of the annual dues of 50 cents.

Organization was effected in March, and in three months the following had been accomplished:

The Sanitary Committee had interviewed the milkmen at a meeting called by the committee, and had ascertained how to secure the tuberculin test. The milkmen were willing to have the test made and to pay for it themselves, and the matter was precipitated by the owner of a large herd engaging a veterinarian to come to make the test, and finding in the herd three badly infected cows. All the large local herds were inspected; but the effort to secure an ordinance requiring the test semi-annually, as it should be administered, was postponed in the hope that this will soon be required by statute.

Also, the chairman of the Sanitary Committee, having previously presented to the club initiating the movement a paper on garbage disposal, and having at that time written to twenty towns in the state, asking for their methods, had inaugurated a trial system of garbage collection.

The Education Committee had circulated its petition, and secured three hundred signers; but before the petition was presented the school board passed the resolution to introduce manual training and domestic

science into the school. The Association then voted to equip the school dining-room with tables, chairs and linen.

The Art Committee had taken orders for more than \$60 worth of shrubs, vines and roses for private grounds. At the invitation of the committee, Mrs. McCrea, a member of the Executive Board of the American Civic Association, visited the town; and later Mr. John Nolen, the First Vice-President of the Association, did the same.

The Streets and Alleys Committee had secured a clean-up day, named by the mayor, previous to which a sub-committee was named to report the sidewalks not cleaned of snow.

The Children's Auxiliary Committee had distributed 1,300 penny packages of flower and vegetable seeds, and had offered \$25 worth of prizes to the children for flowers entered in a flower and vegetable show announced for September.

These were mere beginnings, but in them the work was launched and given an impetus that made permanence a certainty.

Correcting the Mistakes

In the judgment of the organization itself, and measured by the wider experience of others, two mistakes had thus far been made:

The first was in limiting the membership to women. Obviously, the concerns of any town-development organization are the concerns of everybody in that town, and the membership should consist of the members of that community.

The second mistake was in having no fixed habitation for the organization. Quarterly meetings were held in the afternoon in the City Hall. The meetings should be more frequent, and they should have a place to come together in regular and special sessions. These should be visited by as many outside speakers as the society can afford; speakers, in these days of university extension, being ready to come whenever the interest is manifest which it is their vocation to stimulate.

Both these reasons suggest again the social center as the logical basis for community study and civic activity, because a social center's membership consists of the members of the community.

It was two years after the original organization had been formed that the first of these mistakes was repaired. A reor-

ganization was effected on a basis of membership of both men and women, and a new constitution was adopted, which is here given in full:

A Model Constitution

Article I. Name.

Article II. Object.—The object of this Society shall be the improvement of _____ in sanitation, education, beauty, and other conditions which shall conduce to the health, morality, happiness and general good citizenship of its people.

Article III.—Members.—Any person may become a member of this Society by signing the Constitution and paying fifty cents [suggested] annually to the Treasurer.

Article IV. Section 1. The officers of this Society shall be President, Vice-President, Secretary, Treasurer, and an Executive Committee. Section 2. The officers may be named by a nominating committee, and shall be elected by ballot at the annual meeting. Section 3. The Executive Board shall consist of the officers, seven members of the Society elected by ballot, and the chairmen of the standing committees.

Article V. Section 1. The Society shall meet annually on the first Saturday in March, at _____, and at such other times as may be ordered by the Society, or called by the Executive Board. Section 2. One-fourth of the enrollment shall constitute a quorum, provided that at any time fifteen shall constitute a quorum.

Article VI. The standing committees of the Society shall be as follows: Sanitation, Education, Outdoor Art, Children's Auxiliary, Streets and Alleys, Public Buildings and Recreation, Rest-Room, Tree Culture, Charity Coördination, Membership, and Press.

Article VII. Amendments.

Article VII was later used to amend Article V so that it should provide for three quarterly meetings in addition to the March annual meeting of the Society, these to take place in January, June and September.

Meetings of the Executive Board were to be held on the second Tuesday in every month.

The keynote of the new society thus became the keynote of all society: "The responsibility of adults for conditions which shall conduce to the health, morality, happiness and general good citizenship of the young people." For, if the adult society is working for this, then its own health, morality and happiness are finding promotion.

THE FOREIGN DEPARTMENT

A Record of Municipal Progress Abroad

Conducted by Edward Ewing Pratt, Ph. D.

Flowers and Fruit at the Ghent Exposition

The flower show is destined to be one of the leading attractions of the Universal Exposition of Ghent. It is, to a certain extent, a feature apart from the Exposition proper, being the regular quinquennial exhibit of the Ghent Association for Fostering Horticultural Activity. The display is to take place in a specially constructed building erected in the city's park, which is to be the only permanent structure of the Exposition.

Foreign coöperation promises to add greatly to the brilliancy and interest of the floral section, and an especially important participation has been assured by English and French horticulturists. A list of members of the jury which has been definitely agreed upon includes the leading horticultural authorities of the world and comprises some 300 names. California has shipped a large exhibit of products, which promises to be a more elaborate display than that which received so much favorable comment at the Turin Exposition.

The Exposition opened on April 28, and will be continued for six months, closing in November. Among the important conventions to be held in connection with the Exposition are the Tenth International Congress of Agriculture in June and the International Viticultural Congress, which will convene during the same month.

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A Garden Cities Association for Poland

Dr. Dobrzynski, the President of the Warsaw Garden Cities Association, has announced that the Russian authorities have given his society their official sanction and definitely recognized its existence. Three years ago the Warsaw Hygienic Society established a department for the building of garden suburbs, and one of the first things they undertook to do was to spread the garden city idea. Popular lectures and speeches were arranged, various cities of the Polish province were visited, pamphlets and reports were issued, and numerous articles were secured in the press. Dr. Dobrzynski was sent both to England and Ger-

many to investigate the garden cities and town planning movement.

As a result of Dr. Dobrzynski's trip, a garden cities exhibit was arranged in Warsaw and visited by some 25,000 people. Soon after, a company was formed corresponding to a public utilities society, on the lines of the first garden city at Letchworth, where the dividend is limited to 5 per cent. A tract of 210 acres along the Vistula was secured, plans were prepared, and a new garden suburb is now coming toward realization. A special car-line is being constructed to connect the garden city with Warsaw, and as soon as this is completed the building of the suburb will be actively carried on.



Park Development in the German Capital

Berlin consists not only of the city proper, but also of a number of adjoining suburbs, of which the more important are Charlottenberg, Schoneberg, Rixdorf and Wilmersdorf. The present officially estimated population of Berlin proper is 2,091,000, but including the suburbs it approximates 4,000,000.

The municipal development of Berlin and its suburbs went forward quite independently until the formal organization by the Prussian government of the Zweckverband in 1911. The medium through which this union works is a council made up of representatives from the constituent municipalities. Its jurisdiction extends to several matters of common interest, including transportation and building interests, and it is especially charged with protecting the forest parks surrounding the city and with preserving the city's horticultural beauty. These forest parks are pine woods which lie north and west of the city. They are owned by various of the several municipal governments, which derive a revenue from the timber which they yield. Since its organization the Zweckverband has been chiefly engaged in solving problems relating to the preservation of these forests, and has as yet done nothing in park building.

The present park area of Berlin proper is as follows:

- 9 parks covering 776 acres
- 147 small decorative plots covering 254 acres
- 3 tree nurseries covering 42 acres
- 1 school garden covering 74 acres
- Total, 1,146 acres.

The park commission has planted trees on 296 streets, the combined length of which is 106 miles. Around the trees are 262 garden plots having an aggregate area of 237 acres. For children's playgrounds the commission maintains 99 acres of grass plots, ranging from $1\frac{1}{4}$ to 17 acres each; 75 acres of grass plots, ranging from 350 square yards to 2 1-3 acres each, and 60 sand piles, ranging from 25 to 950 square yards each, an aggregate area of about 173 acres. The sand piles are provided with 56 play tables and 18 shelter roofs.

The suburbs of Berlin have made equally generous provision for parks. On March 31, 1912, Charlottenberg, with a population of 309,400 and a total land area of 5,790 acres, had a park area of 618 acres. In addition, the city maintains 4 tree nurseries and several municipal greenhouses, which in March, 1912, contained plants of an aggregate value of \$10,460. In the course of the year 456,643 plants, worth \$17,000, were used in beautifying various parts of the city.

Wilmersdorf's chief project is the construction of a 34-acre park around a small lake which lies in the center of the city. It will be divided in three parts by intersecting streets, so that traffic routes may be undisturbed. It will afford every kind of popular amusement, and generous provision is being made for children's playgrounds, sand piles, etc.

The population of Wilmersdorf is 115,000. It maintains the following force in its park department: 1 over-gardener, 4 expert gardeners, 4 overseers and 49 permanent helpers and laborers. An additional force, averaging about 80 men and about 12 women laborers, is employed by the day.

The Wilmersdorf park will join and practically form a part of the City Park of the neighboring city of Schoneberg. This park has an area of 19 acres, and reaches from the middle of the city to its western boundary. It took $2\frac{1}{2}$ years to build, at a total cost of \$195,000, exclusive of the land value.

Schoneberg owns its own municipal gardens, covering 50,000 square yards, which, when completed, will contain 11 greenhouses, 125 hotbeds, a botanical section for providing schools with demonstration specimens, and a municipal tree nursery.

ROADS & PAVEMENTS

Photographs and data are requested for possible use in this department, from municipal officials, city or county engineers, road superintendents, manufacturers or others having interesting information on subjects relating to roads and pavements.

Instructions to Inspectors of Street Paving



Some Practical Suggestions from a Handbook Prepared by E. V. Frothingham, Commissioner of Public Works, and H. W. Durham, Chief Engineer of Highways, Borough of Manhattan, New York City



WHEN defects develop in recently laid paving, it is natural to blame the cupidity of the contractor or the carelessness of the city's inspectors. Is it not probable, however, that the fault is more often one of ignorance than of dishonesty or even of apathy? No matter how honest the contractor, it is obviously impossible for him personally to superintend every operation in the process of road-building; and, no matter how conscientious the inspector, good intentions alone will not transform him into a highway engineer. Too seldom have the public works departments of our cities made available, in a form both handy and easily understood, the information with which paving inspectors should be equipped for an intelligent performance of their duties.

As offering suggestions which may prove of practical value to other cities, the following sections are reprinted by permission from a recent handbook of "Instruction to Inspectors of Street Paving," issued by the Borough of Manhattan. It is explained in the introductory paragraphs of the pamphlet that these instructions are to be considered as supplementing, but in no case as taking the place of or modifying the specifications; the object of the handbook being to secure full compliance with the contract and specifications, and the performance of first-class work by the contractor in such minor details as are not specifically mentioned, but implied, by the contract and specifications.

In addition to the sections quoted, the handbook contains "General Instructions,"

"Instructions to District Inspectors," "Instructions Governing Sidewalk Repairs" and "Instructions to Inspectors of Repairs on Old Pavements." The sections here reprinted are quoted in full:

Preparation of the Sub-Foundation

Where earth excavation or embankment is necessary to bring the sub-grade to proper grade, the important points to be looked after are:

- a. To bring the sub-grade to the true and proper grade and contour required for the pavement
- b. To properly consolidate the sub-grade, so that it will furnish a firm support for the pavement and its foundation

You must see that the excavation and grading are done in accordance with the lines and grades furnished by the survey party and that all unsuitable material is removed and replaced by good earth. When grading stakes are set for the guidance of the contractor, you are to see that the surface of the sub-grade is made to comply with them and that no humps or depressions occur between the stakes.

It is particularly important that the surface shall not be higher than intended, because in that case there will not be room for the full thickness of concrete foundation and pavement surface designed.

The fine grading must be done with a pick and shovel, and the surface brought carefully to true grade. If embankment or filling is required, the filling material must be deposited in regular layers not more than 4 inches thick, and each layer must be compacted by rolling or tamping before the next layer is applied.

The surface when brought to grade, whether by excavations or filling, must be thoroughly compacted by rolling. If after such compression the surface is above or below the true grade, it must be trimmed, or additional material added and rerolled and rammed, so that

the completed surface will conform to the proper grade and contour of the sub-foundation with no variations exceeding $\frac{1}{2}$ inch. A heavy horse street roller, if approved by the chief engineer, or a steam roller, may be used, and the rolling must be continued until the sub-foundation is firm and dense. On soft or clayey soils the rolling of the sub-surface should not be continued until the material becomes plastic and yields in wavelike form under the roller. Soft or spongy spots or areas that do not consolidate under the roller shall be dug out to a depth of not less than 6 inches and refilled with sand, gravel or other good material while the rolling is in progress.

You must see that all city or corporation manhole heads and water boxes are set on masonry foundations to the required grade. Where new standard manhole heads are to be provided, you must see that all the worn heads are removed and replaced by new heads. Should any of the old heads be of the standard type and in good condition, they must be left in the street.

You must see that the operation of fine grading shall be kept at least 50 feet in advance of the concreting and that grade stakes are set at the crown and at each quarter at intervals of not more than 15 feet, the top of which should indicate the finished surface of the concrete base.

Curbing

Care must be taken to carry out the specifications relating to the redressing and resetting of old curb. The tendency is always to slight this work, to use old curbing not fully up to the required dimensions and to allow laxity in redressing the stones to the standard specifications. Each stone should be examined before it is set and those not up to the requirements marked on top with paint, so that they may be recognized if set by mistake or otherwise. You must, however, see that all the old curbstone that can be redressed to specification dimensions is so dressed and used, careful record being kept of the quantity and location of the same.

Careless workmanship frequently results in layers of dirt between successive layers of concrete. When the concrete is to be deposited back of the curb, you must make sure that it will rest on a clean foundation, be directly in contact with the curbstone, and of full specified thickness.

In setting curbstone the important points to be looked after are:

- a. To see that the stones are set to the true grade and position
- b. To see that the full space for concrete under and around the stone is provided
- c. That the concrete used around the stone is of the specified quality
- d. That the concrete is placed and compacted so as to fill all the space under and around the stone as specified
- e. That no foreign material, either dirt or broken bits of flagging, be permitted to become mixed with the concrete

The tendency of the workmen is usually to consider the above details as unimportant and to slight them.

Concrete Foundation for Pavement

You must see that the requirements for this work are strictly complied with. Upon the quality and integrity of the concrete foundation largely depends the satisfactory surface of the pavement. The thing to be most carefully looked after is the quality of the materials. This is described in sufficient detail in the specifications.

The quality and kind of Portland cement delivered on the street will presumably have been approved by the chief engineer before actual work is begun. You are to ascertain whether or not this is the case. Any change in the kind or apparent quality of the cement brought upon the work must be reported to the assistant engineer and his approval secured before it can be used. You will occasionally make balls of stiff mortar from the neat cement and set them aside for observation. If in 8 hours these balls do not set up hard, the fact should be reported.

The sand and stone delivered will naturally vary somewhat from time to time, but should not differ materially from the requirements of the specifications. Stone that contains any considerable quantity of foreign matter or refuse or fine material that obviously will pass through a screen of one-half inch meshes, or that is larger than the specification requirements, or that is not hard and sound, should be rejected.

Cement must be effectually protected from water or dampness. Packages of cement which, when turned out, contain hard lumps should be rejected. The provision that sand, stone and gravel must be stored on planked floors on the street must be enforced. If not so stored on planked floors it is likely, particularly in rainy weather, to get mixed with street dirt and mud.

The proportion of stone or gravel, sand and cement prescribed by the specifications must be strictly adhered to. A barrel of cement will be considered as 4 cubic feet and a standard bag of cement as 1 cubic foot, and the stone and sand proportioned accordingly.

The contractor often desires to measure the sand and stone by wheelbarrow loads. In such cases you will measure the capacity of the barrows used and determine the size and number of loads required for one batch of concrete, and thereafter insist that the loading conform to this standard size. As a check, you should frequently keep account of the bags of cement and the barrow loads of sand and of stone used during, say, two hours and measure the quantity of concrete made and determine from this data the ratio of the materials used. In any case, your returns for the amount of material used during the day on your daily report must give exact quantities as counted by you, both as to bags of cement and cubic yards of sand and stone used, and must not be estimated from calculations based on the amount of concrete laid.

One hundred square yards of one: three: six concrete foundation, laid six inches thick, require:

450 cubic feet, or 16 $\frac{2}{3}$ cubic yards, of stone or gravel
225 cubic feet, or 8 $\frac{1}{4}$ cubic yards, of sand
18 $\frac{3}{4}$ barrels, or 75 bags of cement

MIXING THE CONCRETE

See that the directions of the specifications are followed. The method of gauging the proportions must be accurate, and the operation of mixing, if by hand, must be done on suitable mixing boards. The ingredients must be thoroughly incorporated. You must see that the concrete is deposited as quickly as it is mixed.

When a machine mixer is used, you must acquaint yourself with the theory and principle of operation of that particular type of mixer and be able to detect any change in the proportions or uniformity of the mixture at any time.

When the mixer is of the automatic feed type, you must test it at least once during each day's work, at times unexpected by the foreman, by feeding measured quantities of cement, sand and stone in the proportions of one, three and six into their respective hoppers. If the mixer is gauged properly and feeding freely the measured quantities of materials will be exhausted simultaneously. Should some cement be retained in the cement hopper after the sand and stone are exhausted, it is sufficient indication that the mixer is either improperly gauged or that the cement feed is clogged. Whatever the trouble, it must be corrected before the mixer is allowed to continue.

When the contractor employs a machine mixer into which the materials are not loaded in batches, you are not to depend for the securing of the proper proportions on the accuracy of machine gauging or the proportion of shovels used. The materials must be placed in properly proportioned piles, not containing more than 10 cubic yards in the case of sand, broken stone or gravel, and you must see that the machine exhausts all materials simultaneously. Should it be impossible to obtain these results, due to improper piling of material, you must require the use of measuring boxes for proportioning the charge for the mixer.

Use sufficient water to make what is called a *wet* mixture, but not so much that free water will drain from the mixed batch before ramming.

The test for the degree of mixing or turning will be that all the fragments of stone are fully covered with mortar.

PLACING AND RAMMING THE CONCRETE

Before any concrete is deposited, you must see that the sub-grade conforms to the elevation given by the engineer, and that the grade stakes are in place. Any considerable amount of dust or loose earth must be removed. In frosty weather the frost must be removed from the ground by fires, the use of pavement heaters, or other suitable method.

The concrete must be so handled as to prevent the separation as far as practicable of the water from the stone.

You must see that the concrete is deposited in a straight line from curb to curb perpendicular to the line of the street; that it is shaped to the required grade and crown by means of raking, or screeds if required; that it is thoroughly rammed until all voids are filled; and that its thickness at any point is not less than 6 inches.

Grouting of concrete after it has been laid or the application of neat mortar to the surface and the sweeping of the surface with street brooms to make it smooth or to cover up defects must not be permitted. Concrete made of fine stone in the stated proportions of mixture may be used for leveling up depressions.

The proper ramming of the concrete is very generally neglected and should receive your careful attention. If it is properly done until the water flushes to the top, a smooth surface will result.

When old concrete is encountered as a sub-foundation, you must notify the engineer, who will examine it and, if found satisfactory, will so inform you. But no fresh concrete is to be placed thereon until the old concrete is so examined, accepted and has been measured. Old concrete, wherever met, either as a sub-foundation or at street intersections, must be cleaned thoroughly and wetted, and, if smooth, must be scabbled before fresh concrete is joined with it.

Care is necessary to have the completed surface of the concrete conform to the true grade and contour of the street. This is especially important for asphalt pavement. Variations in the thickness of the asphalt caused by irregular concrete surface permit different amounts of compression under travel in hot weather and thus start incipient depressions in the surface of the asphalt pavement, which increase with age. The grade stakes for the surface of the concrete should, therefore, be carefully set and followed, and humps or depressions between the stakes should be carefully avoided.

The finished surface of the concrete must be adapted to the character of pavement that is to be laid thereon. Should the pavement be sheet asphalt, the finished surface must be roughened by slightly raking the top of the concrete while it is fresh. For all other classes of pavement the smoothest possible finish must be obtained.

In the streets that contain railroad tracks you must see that the contractor confines his work to that portion of the street on one side of the track. The tracks must not be obstructed by the hauling and handling of material, and cars must not be unnecessarily delayed in their passage. You must examine the track and report to the engineer any irregularities found, such as loose rails, depressions, crooked alignment, etc. Should any old concrete exist in the railroad area, you must enter in your record book the location, thickness and extent.

You must see that the concrete is protected from injury while setting, and that no hauling or trucking over it is done except on planks, and only after a proper hardness has been reached.

The period during which the concrete must be allowed to harden will depend largely upon the character of the pavement that is to be laid and the weather conditions. It should not under any condition be less than five days for sheet asphalt pavement nor less than three days for wood block, asphalt block and granite block pavement, unless otherwise directed by the engineer. In hot dry weather the concrete must be kept damp until it has set.

Sheet Asphalt Pavement

If proper care has been taken at the mixing plant, the mixture will not arrive on the street at too high a temperature. Your principal care will be to see that it is not laid at too low a temperature. The minimum temperature permitted by the specifications is 250° F. While the main or interior mass of a wagon load may be well above that temperature, the top and outer part of the load may be, particularly in cold weather, too cold to be safely used. Some of this colder portion may be sufficiently reheated by mixing it with the hotter material if properly handled in unloading; but any material that is so cold as to be lumpy when unloaded or, more particularly, when being raked out, should be discarded. This applies to both surface and binder mixtures. The best practical guide is the manner in which the mixture behaves in raking. It must always be so hot that it will, under the rake, break up into a uniform crumbling or powdery mass. If it does not do this, it is too cold, whatever its temperature may be.

PREPARATION OF STREET SURFACES

Before the binder is laid all loose material, rubbish, street dirt and other matter foreign to the concrete surface shall be removed and the concrete surface swept, if necessary to properly clean it, with street brooms.

Neither binder nor surface mixture shall be laid upon wet surfaces. Before the spreading of the surface mixture on the binder, the latter must be cleaned of all foreign matter and, if necessary, swept. If the binder course already laid has become covered with mud from wagons or other travel, it must be swept clean. No loose fragments of binder material must remain on the surface. Any part of the binder course that may have become broken or loosened must be taken up and new material laid in its place with the same care as the original.

LAYING BINDER COURSE

The binder mixture must be carefully spread by hot shovels and rakes in a continuous layer, stretching from curb to curb, perpendicular to the center-line of the street, and rolled until all the voids are filled. It should then present a uniform layer whose thickness is not less than 1½ inches and whose upper surface is parallel with the finished surface of the pavement and not less than 1½ inches at any point below the same. The tendency is to lay the binder course carelessly and to roll it insufficiently.

Nearly the same care in raking and equally as careful rolling as for the surface course

should be insisted upon. If the binder is not thoroughly compressed and becomes cold before the surface course is laid, it is likely in future hot weather to soften and yield under heavy travel, and thus start small depressions in the pavement.

LAYING THE SURFACE COURSE

The requirements of the specifications should be rigidly enforced in the laying of the surface course. The joints against a cold edge of previously laid surface must be cut back until solid, fully compressed material of full thickness is reached, and the raw edge completely but thinly painted with liquid bitumen. No masses or fragments of cold mixture must be allowed to remain on the surface of the binder in advance of the placing of the surface course to be covered up by the latter. Such cold masses will not be compressed by the roller but will later, under a hot sun and heavy travel, yield and start depressions in the pavement. The raking requires to be properly and skillfully done. The tines of the rake must penetrate to the binder, so that the raked material will be a uniform mass from top to bottom.

ROLLING

You must insist upon the rollers being placed upon the freshly raked surface just as soon as the material will bear them without being squeezed out or displaced laterally. The tendency is to keep the roller off too long, thus permitting the chilling of the surface and preventing its proper compression. Do not take the contractor's word as to how soon the rolling may be begun, but have trials made until you are able yourself to judge. The rolling by the heavy roller should be very thorough; keep the roller at work constantly until the surface is too cold to be impressed. In operating the roller lengthwise of the street, begin at the gutters and work toward the center of the street whenever practicable. Cross rolling and diagonal rolling must be insisted upon wherever the width of the street will permit it.

PROPER THICKNESS AND SURFACE

While the completed surface is still warm enough to permit it, measure the thickness of the surface course by forcing the graduated spatula through it to the binder. Also test the trueness of the finished surface with the straight edge, and if found defective in either thickness of pavement or trueness of surface, insist on heavier and more careful raking on the further work. Try the completed gutters with water to see that they are so truly laid that puddles of water will not stand in them.

Asphalt surface must not be laid when rain or snow is falling or so long as the surfaces are wet. Surface mixture raked out and caught in a shower before it is well enough rolled to exclude water must be taken up and discarded.

Measure and record each day the area of pavement laid and the quantity (number of batches) of surface mixture used, and note any lack of uniformity in the area laid per batch.

Granite Block Paving

The more important things for the inspector to look after are:

- a. The quality and shape of the blocks
- b. The sand cushion
- c. The setting of the blocks
- d. The ramming of the surface
- e. The filling of the joints

THE BLOCKS

(a) Assuming that the general quality of the granite has been approved, you will need only to observe and reject blocks made from soft or weathered or otherwise defective stone. Any material divergence of the blocks from the correct form or from the sizes specified as permissible will be readily caught by the eye as they are brought to the street, and can then be thrown out. The proper dressing of the blocks is important and should be watched carefully. While you are not expected to examine each individual block, close observation of the blocks as they are handled and laid will enable you to detect and reject those that are materially defective in shape or dressing; or excessively wide joints will call attention to them as they are set.

SAND CUSHION

(b) Screened sand must be used for the cushion bed. It should be moderately coarse and must be fairly clean and pure. The tendency with contractors is to use any dirty sand or sandy loam available on the street. Such material, especially if it becomes filled with water, will yield under the blocks and will not support them properly. The sand bed should not vary materially in thickness. It should be laid and graded not more than 50 nor less than 20 feet in advance of the setting of the blocks.

SETTING THE BLOCKS

(c) The blocks upon being brought to the work must be compactly piled along the sidewalks, due care being exercised to leave openings in front of business houses, stables, etc.

Blocks of uniform width and depth must be selected for each course, and each block must be laid upon a full bed of sand and "struck in" at the base so as to bring the stone in close contact with its neighbor in the preceding course and thus insure the closest possible joint. You must see that the joints in the line of traffic are close, and must see that the alignment of the courses is true. This is most important, as a crooked or wavy course lessens the chances of getting close joints, not only along that particular course, but also along the courses that are to follow. You must see that all joints are broken by a lap of at least 3 inches. The operation of ramming is not to be permitted to approach within 20 feet of the paving. After ramming the surface of the pavement may look somewhat wavy and uneven. You must see then that it is back-rammed. All blocks below the general plane of the surface must be raised and more sand placed thereunder, and the blocks rammed again to an even bearing.

Bond stones with their upper surface set exactly to the grade or contour of the paving before ramming must be set in lines across the street at intervals of not more than 6 feet and with at least three such stones in each line on a 30-foot roadway and five on a 60-foot roadway. Care in setting these stones and in paving to the lines defined by them will prevent the completed surface of the pavement having the wavy appearance so often to be seen.

(d) Whether sand or grit is used for partly filling the joints before the paving cement is poured, care must be exercised in placing the sand or grit in the joints. Dumping a wheelbarrow load on the surface and then sweeping the joints full is absolutely forbidden.

Sand and grit or gravel should be dried before being used and put into the joints to as nearly as possible a uniform height as called for in the particular class of granite block pavement.

RAMMING THE SURFACE

(e) This part of the work is likely to be slighted unless carefully watched. The important thing is to have each block equally and sufficiently rammed to bring it to a solid bearing on the sand, as well as to bring its top to the proper grade. The rammers will be disposed to touch lightly blocks or areas which, if thoroughly rammed, would be driven below the true surface of the pavement, and subsequent travel may force these down, making depressions in the surface. You must give this item of the work special attention.

Asphalt Block Pavement

Care should be exercised to make the mortar bed of uniform thickness and give uniform compression while striking it. This will give the blocks uniform support and to some extent prevent an irregular surface. The pavers should always strike each block on top to bed it thoroughly, another block about to be laid commonly being used for this purpose. The joints should be as close as it is possible to make them while keeping the courses straight. To secure this the courses should be driven close every fifth course or thereby.

Wood Block Pavement

The specifications for the laying, on the street, of wood block pavement are unusually full, explicit and plain, and very little additional instruction is necessary for your guidance.

However carefully the lumber may have been inspected before its manufacture into blocks, the subsequent seasoning, treating and handling will develop many defects, and you will need to observe the delivered blocks closely and reject those that do not comply with the specifications.

Under certain conditions the blocks will develop a great many "season cracks" which should not condemn them unless the cracks open for the full depth and to more than one-third of the thickness of the block. What are

called "shakes" result from the separation of the wood along the growth-rings, and, if well defined or open, should condemn the block, though, in many cases, the block after the defective part has been trimmed off may be used.

Final Inspection

As each city block is completed, you must compare the condition of the sidewalks with the recorded condition of same as entered in the field book at the beginning of the work, and must see that they are at once restored to the same condition as described in said record.

Before turning in the contract as completed, you must go over the finished work and make a careful inspection. You must see that no depressions exist; that the flow toward the catch-basins is unobstructed; that no water lies in the gutters and that all manhole heads are flush with the surface of the pavement.

You must see that all adjacent pavements, curb or flagging are immediately adjusted to meet the grade of the new work; that all sidewalks are restored to their original condition, and that all materials, tools and equipment are removed from the street.

A Commercial Club Promotes Road-Dragging Day

By Fred M. Hansen

THE Commercial Club of the town of Stuart, Iowa, recently carried out a unique plan to arouse interest in getting the dirt roads leading to the village thoroughly dragged. The club set a day on which it offered prizes to all coming to town on road drags, and special prizes to those coming the farthest, to the one having the best drag and to the one having the heaviest team. In a community of dirt roads such a jubilee of road-dragging was worth a great deal.

The affair was all that could have been wished for. By two o'clock farmers began to appear in town, riding in on their drags. Travelers for miles around knew that literally "all roads led to Stuart" that day. Some even brought their families for a day of shopping. The understanding was that every farmer coming in on a drag was to receive \$5 worth of merchandise. This was donated by various business houses of the town, having been solicited by the Commercial Club. As the men came in they were directed to the Commercial Club's headquarters, where they were given baskets and the proper credentials to get their merchandise. When they had finished shopping they talked road-dragging with their neighbors, inspected the drags, which were of a varied assortment, and watched the judges award the special prizes. Never before had there been as much good-roads talk in one Iowa town in the same time.

A feature of the day was the appearance of two young ladies who drove in two miles on a drag. They had provided their drag with a comfortable seat covered with rugs, and thus they drove into town amid the cheers of their male competitors. They were among the most enthusiastic of the road-draggers.

The prize for the longest trip was \$3 in cash and a pair of gold spectacles. This was won by a man whose farm is 10½ miles from town. Twenty-one miles on a road-drag is nearly a day's work. The winners of second and third prizes for distance drove a total of 20 and 18 miles, respectively. Those coming in on drags voted who should receive a special prize for the best drag. A four-horse team, weighing 6,720 pounds, was given the special prize for the heaviest team. The second and third prizes went to teams weighing 6,180 and 5,400 pounds, respectively.

Nearly every business man in town helped in some way—either by giving one of the prizes or in doing whatever was asked of him. The First National Bank paid for all the dinners of the "draggers," and the feed-barn man fed all drag-teams free. It was indeed a splendid illustration of coöperation of town and country.

In all more than a score of drags came in. An aggregate of more than 100 miles of road was dragged thoroughly. The main-traveled roads near town were models, of

course, with so many going over them. More enthusiasm for road-dragging could hardly be aroused with as little expense as by this plan. And to the Stuart Commercial

Club, whose Secretary is C. C. Mendenhall, belongs the credit for organizing and putting through this practical form of town and country coöperation.

The Social Effect of Good Roads

"It affects the community—socially, because it brings the firesides closer together and the social centers and gathering-places nearer to the homes; commercially, because the better the roads the easier and cheaper it is for the farmer to get his produce to the

market and the consumer, and the greater his profit and that of his employes. For the same reason it helps a community educationally by creating a closer proximity between the schoolhouses and the homes."—*From Ravenel's Road Primer.*



ON A POOR ROAD, A TEAM HAULS ONLY ONE BALE OF COTTON TO MARKET



ON AN IMPROVED ROAD, A TEAM HAULS ELEVEN BALES OF COTTON TO MARKET

The Treatment of Streets with Asphaltic Oils

By W. Scott Eames

Director of the Department of Public Works, New Haven, Conn.

THE treatment of streets with asphaltic oils is the result of an effort to secure, first, the continuous laying of the dust; and, second, to overcome the especially destructive effect of auto traffic upon the macadam paved streets. These two results have been accomplished, although with objectionable features, to be referred to later. New Haven has now had three years' experience in oiling. The methods at first were tentative. Power sprinklers were put in use at the beginning of the season of 1911, three being the number in use during that year. This number was increased to four in 1912. The power is all derived from the rear wheel of the cart, and the oil is applied under a pressure of about 30 pounds. The sprinklers are so constructed that the quantity delivered through the sprayers can be regulated.

The cost and quantity of oil used in the different years are shown by the following tables:

1910

Total number of square yards reduced to one time over, 1,640,267.

Cost:

| | |
|-------------------|-------------|
| Oil | \$10,241.27 |
| Labor | 6,989.61 |
| Incidentals | 2,976.66 |

Total \$20,207.54

Cost per square yard each time over, \$0.0123.

1911

Total number of square yards reduced to one time over, 2,699,957.

Cost:

| | |
|-------------------|-------------|
| Oil | \$12,979.06 |
| Labor | 11,372.33 |
| Incidentals | 2,514.30 |

Total \$26,865.69

Cost per square yard each time over, \$0.0099.

1912

Total number of square yards reduced to one time over, 4,247,047.

Cost:

| | |
|-------------------|-------------|
| Oil | \$12,643.60 |
| Labor | 10,101.63 |
| Incidentals | 1,810.66 |

Total \$24,555.89

Cost per square yard each time over, \$0.0058.

In 1912, a few streets were done four times over during the season, and the great

majority were done three times over; while in 1911 comparatively few were done as many as three times over. The oil was not as lasting as in 1911.

The following table shows the reduction from year to year of the quantity of oil used per square yard:

1910

| | |
|--------------------------|------------|
| Gallons of oil used..... | 297,681. |
| Yardage | 1,640,267. |
| Gallons per square yard. | .181 |

1911

| | |
|--------------------------|------------|
| Gallons of oil used..... | 332,895. |
| Yardage | 2,699,957. |
| Gallons per square yard. | .123 |

1912

| | |
|--------------------------|------------|
| Gallons of oil used..... | 327,910. |
| Yardage | 4,247,047. |
| Gallons per square yard. | .077 |

It will be noticed that the cost per square yard has been materially reduced each succeeding year, and the quantity of oil applied to each square yard has also been materially reduced.

The first cause of this reduction in cost was the introduction of the use of power sprayers, which distributed the oil much more uniformly and made possible a better regulation of the quantity applied. The next cause was in the development of the method of application.

Instead of sending the carts to different parts of the city, they were all used on the same street, in charge of one man, the foreman, in addition to the driver. Three carts can follow, one after the other, on the same street. Much depends, however, on the foreman to see that the cart following does not lap more than an inch or two at most on the work of the cart preceding; for it has been proven that a lap of one to three feet, as would be the case if the drivers were left to themselves, would mean a great waste in oil and in time.

In the matter of the reduction of the quantity of oil per square yard applied each year, it was found that the macadam pavements would take up less oil each succeeding year, and it was necessary to reduce the amount discharged from the sprayers to prevent an excess. In consequence of this lighter application the oil dried up more

quickly, and it was necessary to treat the streets more frequently. Still, the result was economically favorable to the city.

This asphaltic oil undoubtedly makes the mud in the early part of winter, during the wet weather, more disagreeable than it otherwise would be, but that seems to be unavoidable. The question has frequently been raised as to whether the use of this oil would not ultimately be injurious to the pavements, but there have been no certain indications of that result yet; and there have been instances where the asphaltic oil has brought roads which had begun to ravel into good shape, rebinding the stone. Until

the roads can be paved in some more permanent way, the asphaltic oil treatment is the only method within our present knowledge by which we can protect our macadam pavements under modern conditions of traffic. As a dust layer, it seems to be the almost unanimous sentiment of the public as well as of the experts that, notwithstanding some objectionable features, it is a very great improvement over water sprinkling and, because of its complete obliteration of dust where used, has made conditions much more sanitary. The idea that the oil fumes or oil dust was injurious to the eyes and throat has been disproved.

Hartford's Experience with Non-Asphaltic Oils

By Charles J. Bennett

State Highway Commissioner of Connecticut

THE city of Hartford has done considerable work in dust suppression with oil. Our problem is complicated by the fact of underlying soil, clay; and in many instances macadam roads are built in such a manner as to allow the clay to come up through the roads in wet weather, so that with oil as a dust layer the mud is very disagreeable and heavy. My personal opinion is, with the use of a non-asphaltic oil the amount of mud is materially reduced.

Furthermore, the non-asphaltic oils give a minimum number of complaints on account of tracking the oil into the houses, for they dry into the road more quickly than the asphaltic oils and are less unsightly. With the continued use of asphaltic oils, even under the best of conditions,

it is found that a mat of asphalt deposits on the road. This, after several applications becomes practically impervious to either oil or water, and the asphaltic oils are too heavy in body to apply on account of the length of time it takes for them to dry. With the use of non-asphaltic oils after this mat has been deposited, the asphalt is softened, making it "tacky" and dustless.

I am of the opinion, therefore, that with the use of the lighter bodied asphaltic oils, followed by applications of very small quantities of non-asphaltic oil, the ultimate benefit of dust-laying with petroleum products will be greater. In all cases oil should be applied by pressure machines, so as to give uniform distribution.

Legal Notes

Municipal Taxation of Telegraph Companies Not Sustained

An ordinance imposing an annual tax of \$100 on telegraph companies doing business in the city, or, in lieu thereof, \$2 on each pole within the city limits, is void as against a company doing interstate, as well as domestic, business. (Georgia Supreme Court, Postal Telegraph-Cable Company vs. City of Cordele, 76 Southeastern Reporter, 744.)

Invalid Fire Regulations

An ordinance of the city of Minneapolis which prohibits occupancy of the attic floor of a two-story frame building by persons living independently of those occupying the lower floors is invalid as being unreasonable and discriminatory, in that the regulation is not applied to three-story frame buildings nor to two-story brick or concrete buildings not of fireproof construction. (Minnesota Supreme Court, State vs. McCormick, 138 Northwestern Reporter, 1032.)



The editors are glad to receive photographs and data for possible use in this department from municipal officials, water works superintendents, consulting engineers, manufacturers or others having interesting information on water supply subjects.

Pure Water for Minneapolis

By W. P. Kirkwood

IT takes a very smart and lively germ to find its way into the water supplied to the people of Minneapolis these days. Whereas Minneapolis used to have not infrequent epidemics of typhoid with their sombre death-lists, there is little chance that the city will ever be so afflicted again. The cause of the epidemics was tainted Mississippi River water. Mississippi River water is still used, but it is now put through such a thorough purifying process that, whereas the standard of pure water in Europe allows 50 bacteria to the cubic centimeter, Minneapolis water now contains from 6 to 8 only, and none of these is the typhoid bacillus. The purification is done in a new \$700,000 filtration plant that is science's latest word in the art of purifying water.

The new filtration plant of Minneapolis is situated between two and three miles north of the business heart of the city, on a hill more than 200 feet above the average city level, which gives sufficient head to carry water to every part of the city's $53\frac{1}{4}$ square miles of area, with an average pressure of about 75 pounds in the business district. The crude water is pumped from the river, well upstream from the city, the distance from the pumping station to the filters being about three miles.

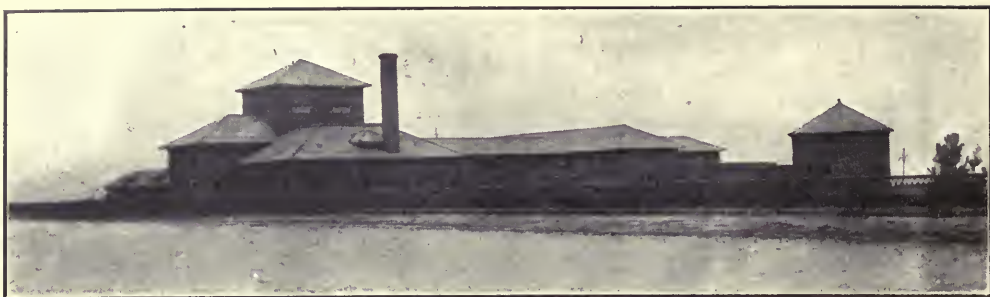
The plant consists of three principal parts: a settling, or raw water basin, 8 acres in area, with a capacity of 75,000,000 gallons; a purification house and adjuncts, and a covered clear-water basin or reservoir, also of about 8 acres, but not so deep as the settling reservoir, with a capacity of 50,000,000 gallons. The raw-water basin

lies on the summit of the hill, the purification works cling to its westward slope, and the pure-water basin is on a slightly lower level. Gravity, therefore, carries the water from the raw water basin through the plant and into the clear-water basin, saving any necessity of pumping.

The Purifying Process

The raw water is run from the settling reservoir through a huge reinforced concrete meter into a controlling chamber. Thence it passes into a mixing chamber, a great concrete basin 35 feet wide, 173 feet long, and about 20 feet deep. Here it is forced back and forth from side to side by baffle-walls, being thoroughly mixed, in the course of its flow, with solutions of lime and alum. The lime and alum react upon each other and form a sort of curd. This in great part settles, with trapped impurities, in what are known as coagulating basins, into which the water flows from the mixing chamber. But to eliminate as much of the suspended matter as possible, the clearer water at the top is skimmed off, passing out of the coagulating basins over weirs.

From the coagulating basins the water is conducted to the filters. Each of these is in a concrete tank, $26\frac{1}{2} \times 51$ feet in size, with a capacity of 3,250,000 gallons daily. There are twelve of them, so that the total capacity of the plant is 39,000,000 gallons daily, which is nearly double the present daily consumption by the city. The water enters the filters by concrete troughs, spills over onto a bed of moderately coarse sand $2\frac{1}{2}$ feet deep, and, seeping through this, comes to a bronze wire matting of 100



MINNEAPOLIS FILTRATION PLANT

meshes to the square inch. Below this it passes through four grades of gravel, the finest at the top, and then runs off through a brass strainer and is piped away into the clear-water basin. Either just before the water enters the filters or just afterward, it is given a treatment of hypochlorite of lime, which not only kills practically all remaining germs, but burns them up—oxidizes them. The amount of the hypochlorite introduced is very small, so that it is not noticeable to the consumer.

Cleansing Made Easy

Naturally the deposits left as a result of all of this chemical treatment and straining have to be disposed of, but so perfect are the arrangements for this that it is all done by the turning of a few valves. For instance, if the mixing chamber has to be washed out, it can be cut out, leaving the water to flow directly into the coagulating basins, there to be treated with lime and alum. Then the water in the mixing chamber can be run off, and walls and floor can be washed free of sludge, which is carried off into drains. The same kind of thing can be done with the coagulating basins, one at a time, so as not to interrupt the working of the plant. The filters can be cleansed, one or more at a time, by stopping the flow of unfiltered water downward through them, and forcing filtered water—from a pure-water tower—upward through the sand to carry away the deposits into drains. All such operations are easily controlled by the movement of a few levers. Furthermore, nothing is left to possible bad judgment on the part of a careless operator as to determining when a filter should be cleansed. On the controlling table of each filter is an indicator. When this records a certain amount of deposit on top of the sand-bed, the filter must be washed. The

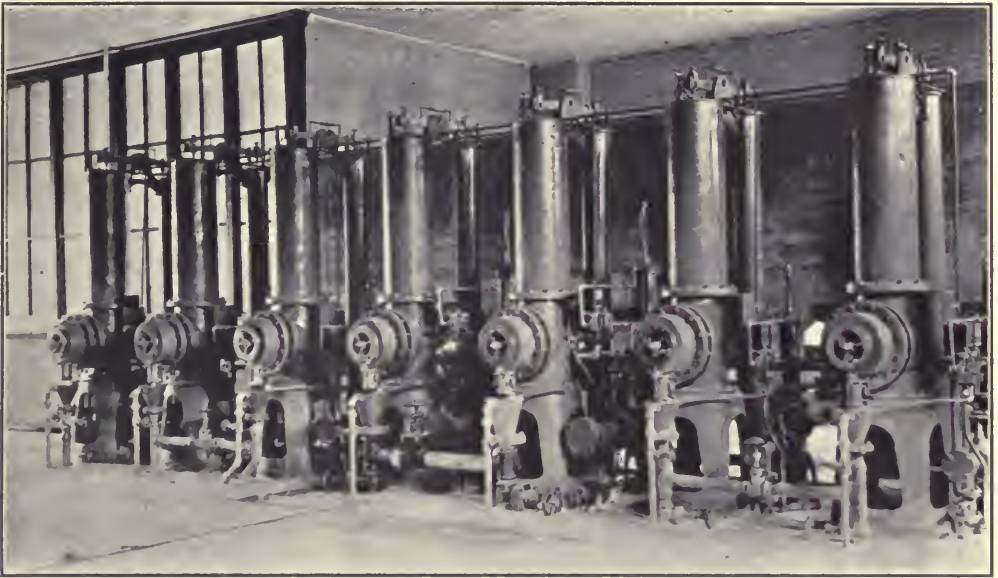
whole washing process requires less than 15 minutes.

Again, the amount of lime and alum and of hypochlorite introduced into the water is also automatically controlled. The water is tested frequently in a thoroughly equipped laboratory. The tests show the amount of chemicals needed for a given amount of water. The controllers are then set, and the amount of water flowing into the controlling chamber determines the amounts of the chemicals released.

To insure the utmost cleanliness, the filters are under cover, the room being thoroughly ventilated by a fan system and kept clean by the use of the most improved vacuum cleaners.



OPERATING GALLERY



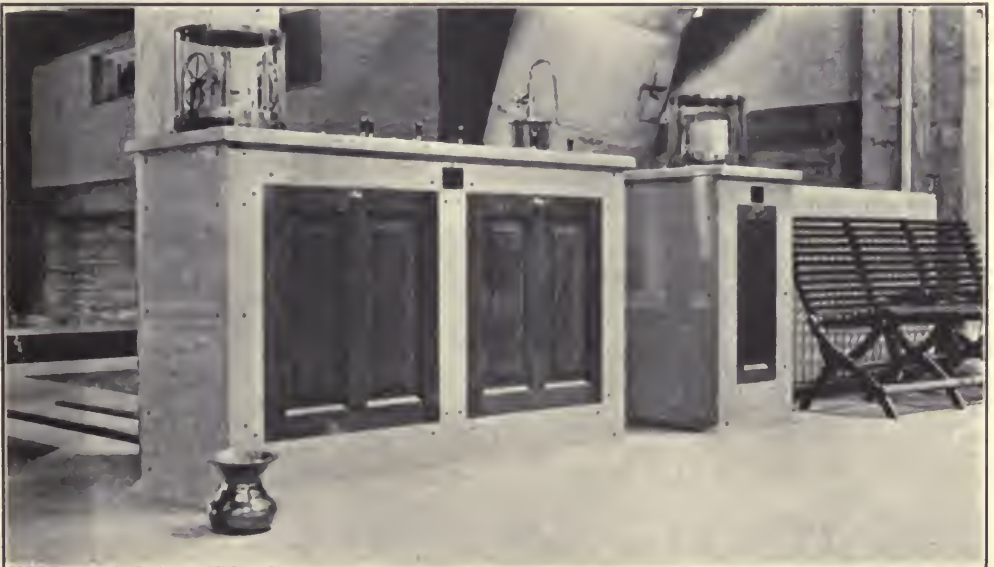
CHEMICAL CONTROLLERS

These regulate the flow of chemicals into the water to be treated

The Handling of Chemicals

Large amounts of chemicals, of course, have to be used, and these are handled with a minimum of labor. The lime and alum are purchased by the carload. They are deposited on a special unloading floor, and from there are carried by a bucket elevator

to the heads of chutes which drop them into storage bins. From these bins they are drawn off as needed into buckets traveling on overhead rails. Each bucket is attached to a scale-beam, so that its contents may be weighed before being transferred to the mixing tank. The hypochlorite is received



THE FILTER CONTROL

The device at left on top indicates when filter should be washed. The washing is performed by moving the little levers on top of the table

Proposal Notices

Any city, town or county which places a club subscription for **THE AMERICAN CITY** is entitled to the use of this department without charge for proposal advertisements not exceeding four inches single-column measure. Additional space at reasonable rates. If bids should be asked for at too early a date for insertion in the following issue, send copies of your notice to **THE AMERICAN CITY**, and we will distribute same without charge.

PAVING

Rutherford, N. J.
Sealed proposals will be received by the Council of the Borough of Rutherford, N. J., at the Council Chamber, in the City Hall, Rutherford, N. J., on Friday, the thirteenth day of June, 1913, at 5 o'clock P. M., for the paving of Station Square and Park Avenue, from said Station Square to Rutherford Avenue, with first quality vitrified paving blocks.

The work consists of approximately the following amounts:

25,800 square yards for the Borough of Rutherford.

12,400 square yards for the street railway company.

Plans and specifications can be examined and all necessary information obtained at the office of the Clerk of the Borough of Rutherford, City Hall, Rutherford, N. J., any day, except Saturday, between the hours of 9 A. M. and 5 P. M.

All bids must be presented by the bidders in person, or by their agents, to the Council at the above stated time and place. No bids will be received previous to the hour designated in this notice and none will be received thereafter. All bids will be unsealed and the contents publicly announced at the above mentioned hour and place. All bids must be accompanied by a certified check for ten per cent of the amount bid and be enclosed in a securely sealed wrapper endorsed, "Bid for Park Avenue Paving."

The Council reserves the right to reject any or all bids.

FRANK A. STEDMAN,
Borough Clerk.

PASSAIC VALLEY SEWERAGE COMMISSIONERS

Newark, N. J.

Notice is hereby given that the Passaic Valley Sewerage Commissioners have designated Tuesday, the fifteenth day of July, nineteen hundred and thirteen, at two o'clock in the afternoon, as the time when they will meet at their usual place of meeting, Essex Building, Clinton Street, Newark, New Jersey, to receive proposals in writing, for constructing Section 1 of the Passaic Valley Sewer in New York Bay, off Robbins Reef, in New Jersey.

Particulars that may enable contractors to judge of the character of the work are given below:

Quantities

All bids will be compared on the basis of the Engineer's Estimate of Quantities of work to be done.

Item 1. Furnishing and placing, in trenches dredged below the bed of New York Bay, two lines of 96-inch reinforced concrete pipes, 3,000 linear feet.

Item 2. Furnishing and placing in trenches dredged below the bed of New York Bay, reinforced concrete pipes, with horizontal and vertical branches, having diameters ranging from 24 to 96 inches, 1,500 linear feet.

Item 3. Furnishing and placing rip rap, of ½ to 3-ton stones, in trenches,

for 24 to 96-inch reinforced concrete pipes and branches, 30,000 tons.

Item 4. Rock excavations in dredged trenches, 100 cubic yards.

Drawings, form of contract and specifications and blank form for proposal may be obtained at the Commissioners' office from William M. Brown, Chief Engineer.

The Commissioners reserve the right to reject any or all bids.

PASSAIC VALLEY SEWERAGE COMMISSIONERS.

JOHN S. GIBSON, Clerk.

May 6, 1913.

SANITARY SEWERS

Pulaski, Va., May 9, 1913.

Sealed proposals will be received by the Mayor and Councilman of the Town of Pulaski, Virginia, until 3 P. M., June 17, 1913, for furnishing material and constructing a system of sewers for said town.

The work to be let consists of furnishing material and laying complete about 10 miles of 6-inch to 18-inch vitrified sewer pipe and constructing complete the necessary manholes and flush tanks.

Proposals shall be sealed, and shall be made upon the proposal blanks attached to the specifications and shall be addressed to the Mayor.

Plans and specifications will be on file in the City Engineer's and Mayor's offices and may be obtained for proposal purposes upon a deposit of \$7.50. Certified check, \$1,000.

The Town reserves the right to reject any and all bids.

JOHN T. LOVING, Mayor.

J. H. RATCLIFFE,

Chairman Sewerage Committee.

M. S. HUDGINS,

City Engineer.

STREET IMPROVEMENT

Ridgefield Park, N. J.

Sealed proposals for the improving of Hazelton Street, in the Village of Ridgefield Park, N. J., will be received by the Board of Commissioners of said village, at the Municipal Building, 232-234 Hackensack Road, on Tuesday, June 10, 1913, at the hour of 9 o'clock P. M. only.

Said Board of Commissioners reserves the right to reject any or all bids.

Approximate quantities of work to be done are as follows:

1,518 cubic yards of excavation.
2,667 linear feet of bluestone curbing.
4,630 square yards crushed stone foundation, 5-inch loose measure.
4,630 square yards wearing surface, 3-inch loose measure.
2 catch basins.
2 catch basins rebuilt.
2 catch basins brought to grade.
10 manholes brought to grade.
1,000 linear feet sub-drains complete.

Plans, profiles, specifications and instructions to bidders are on file in the office of the Clerk of the Village of Ridgefield Park, and may be examined any day, except Saturday, between the hours of 10 A. M. and 4 P. M.

MILLER D. STARKER, Clerk.

STREET IMPROVEMENT

Ligonier, Ind.

Sealed proposals will be received by the Common Council of the City of Ligonier, Indiana, at the office of the City Clerk, until 7:30 P. M., on the 12th of June, 1913, for the following improvements:

5,700 yards of paving with either vitrified brick, asphalt, crosotied block or Dolorway laid on a concrete foundation.

Also the necessary curbing, excavating and filling. Said improvement shall be made in accordance with plans and specifications on file in the office of the City Clerk.

Proposals must be made on blanks furnished by the City Clerk and must be accompanied by a certified check made payable to the City Treasurer for \$500. Samples of the materials proposed to be furnished shall be submitted with the bid.

The Council reserves the right to reject any and all bids.

R. E. JEANNERET, City Clerk.

NOTICE TO JAIL CONTRACTORS

Belvidere, N. J.

Sealed bids for the Cell Equipment, including plumbing, painting, floors, etc., for the new jail at Belvidere, N. J., will be received by a committee of the Board of Chosen Freeholders of Warren County at the Courthouse in Belvidere, on Saturday, June 7, 1913, at 11:45 A. M. Plans and specifications are on file at the office of F. W. Salmon, County Engineer, Netcong, N. J. Copies of the same may be obtained upon a payment of ten dollars (\$10).

Bidders will be required to accompany their bid with a certified check in the amount of \$500, made payable to the Director of the Board of Chosen Freeholders of Warren County, N. J.

The right is expressly reserved to reject any or all bids, or to accept such as the committee may deem to the best interest of the county.

J. R. THATCHER,

Director of the Board of Chosen Freeholders.

Washington, N. J., May 13, 1913.

SINKING WELL

Galesburg, Ill.

Sealed proposals will be received by the City of Galesburg, Illinois, up to two o'clock P. M., June 5, 1913, for sinking a well 9 feet in diameter and 80 feet deep. Plans and specifications may be examined at the office of the Consulting Engineer in Chicago, or at the office of the Superintendent of Water Works, Galesburg; or copies will be furnished to intending bidders on receipt of a deposit of \$10, which deposit will be returned to the party furnishing same upon the return in good order of the plans and specifications.

J. P. EVANS,

Chairman Water Com., Galesburg.

DABNEY H. MAURY,

Consulting Engineer.

1137 Monadnock Block, Chicago.

in metal drums which, by a clever device, are opened under water in order to protect the operator from the fumes. The solutions of these various chemicals, made in concrete tanks, are pumped from the tanks in which they are prepared to feed-tanks, the flow from which is regulated by the controllers already mentioned.

Cost Less Than Estimates

The designers of the plant are Hering & Fuller, of New York City, but the construction work was under the direction of Andrew Rinker, City Engineer of Minneapolis, with W. N. Jones, an experienced filtration-plant builder, as resident engineer. The work was done entirely by day labor. Not a contract was let except for filter equipment, which includes special devices, such as the city had no means of manufacturing. Yet

so well was the work handled that the entire plant cost about \$50,000 less than the preliminary estimates, plus certain additions for increased capacity; and, when placed in operation at the beginning of the current year, worked without a flaw.

The population of Minneapolis is now about 320,000, and the average daily consumption of water is somewhat more than 20,000,000 gallons. It is estimated, therefore, that the present plan will supply all needs until 1922 or 1924. But the plans were so drawn, and the structure so built, that the capacity may be increased a full third by the simple addition of four more filter basins. No changes whatever will have to be made in the intricate system of piping. The superintendent of the plant is L. I. Birdsall, formerly superintendent of the plant at Rock Island, Ill.

Inexpensive Public Sanitary Drinking Fountains

By Beekman C. Little

Superintendent of Water Bureau, Rochester, N. Y.

APPARENTLY not yet known of—or at least not as yet used in other cities—a very simple device has been adopted by the city of Rochester for furnishing conveniently a cooling drink of water to any of the thirsty citizens or visitors who may be on the public streets during the hot summer months. The accompanying photographs show very clearly the idea, and the following extract from a letter in the *New York Times* gives a brief description of the plan:

"On one of the fire hydrant nozzles is screwed an extension nipple which has an upright service pipe, equipped with a small valve. A sanitary drinking fountain is connected to this upright service, and a small waste pipe is extended down and out to the curb or street gutter, which is generally close to the hydrant. The water is left turned on into the hydrant—all of the nozzle caps of the hydrant being screwed up tightly to prevent leaking—and the small valve is adjusted so that the proper amount of water is served to the fountain.

"After the adjustment is made, the key to the valve is removed, so that there is no incentive, or at least no way, for the user to

tamper with the flow of water. It is even thought wise to let a small stream run continually and remove the rabbit ears from the faucet itself, as these faucets do get out of order with constant use, even if not meddled with, destroyed or stolen.

"Of course, in cold weather these fountains would have to be given up on account of the danger to the hydrants from freezing. This scheme was thought out and designed by one of the employes in the Rochester Water Bureau, who has applied for patents, but has generously given his native city free use of the idea. The expense and labor of erecting and locating this device is so small compared with that usual in getting a public drinking fountain into commission that it ought to be better known and more generally used."

There has always been, and most properly, a very earnest protest against the use of a hydrant for anything but fire protection, as its interior mechanism can easily be put out of order and the hydrant rendered useless as a fire-fighting adjunct by anyone operating it who does not understand its working parts. This fountain, however, does not necessitate the operation of the hydrant except at the beginning of the sum-



"Uncle Sam" Buys the Best

Union Metal Lamp Standards (patented) were selected by the U. S. Army and Navy Engineers for the extensive ornamental lighting system installed at Fort H. G. Wright, New London, Connecticut; also Fort. Mason, U. S. Army, San Francisco, California; also around the famous statue of General Sherman, U. S. Treasury Building, Washington, D. C.

Considering the keen competition for all Government work of this character and the rigid and technical requirements for the *best*, by Engineers and experts having such work in charge, the selection of Union Metal Lamp Standards by them is an unquestioned endorsement of their superiority over cast iron posts.

The shaft of the Union Metal Standard is built up of two layers of special high grade steel, and is therefore absolutely unbreakable, while the shaft of a cast iron standard is only a thin shell of a brittle, unreliable material, so crude in its nature as to be unfit, and unsafe to contain high voltage electric wires, and be placed upon the public streets of a city.

For *Strength, Durability and Beauty*, the three great essentials of an ornamental lamp post, Union Metal Lamp Standards are absolutely without a rival.

Our new art catalog is now ready for free distribution. It contains much valuable information. Mailed promptly on application.

THE UNION METAL MFG. COMPANY

Sole Manufacturers

1400 Maple Avenue, Canton, Ohio

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| W. L. FAIRCHILD | 30 Church St., New York City |
| PACIFIC STATES ELECTRIC CO. | San Francisco, Cal. |
| PACIFIC STATES ELECTRIC CO. | Portland, Ore. |
| FRANK E. FILER CO. | Winnipeg, Canada |
| SYRACUSE SUPPLY CO. | Syracuse, N. Y.; Scranton, Pa. |
| PACIFIC STATES ELECTRIC CO. | Los Angeles, Cal. |
| PACIFIC STATES ELECTRIC CO. | Seattle, Wash. |



This is the COLEMAN Boulevard Lamp

400 of which have just been purchased by the city of Des Moines, Iowa.

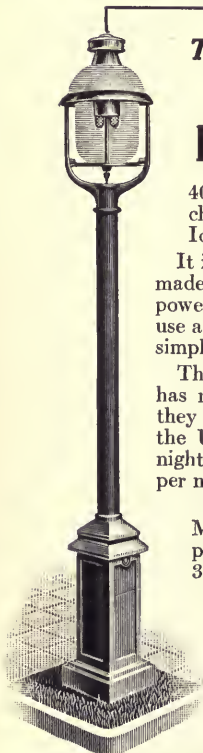
It is a high-pressure gasoline lamp, made both 300 and 1000 candle power. It is adapted to suburban use and towns of medium size. It is simple, durable and economical.

The low cost to install and operate has made these lamps popular, and they are used by hundreds of cities in the United States and Canada. All-night service 5c., midnight service 3c. per night.

Nothing to wear out or rust out. Made of cast iron, brass and copper. Fully guaranteed and sent on 30 days' free trial.

Write for catalog and full particulars **TODAY.**

THE HYDRO-CARBON CO.
Manufacturers of Coleman Lamps
WICHITA, KAN. TOLEDO, O.



THE MODERN ELECTROLIER

Ornamental Street Lighting is a perpetual advertisement of the enterprise of the town as well as a good Municipal asset. It helps develop the business interests of the town. It insures the safety and comfort of the people.

We present herewith a view of one of our standard designs—of pleasing and finished appearance—for Streets, Boulevards, Parks and about Public Buildings. A handsome, permanent structure. Impervious to the weather and erosion.

Made up of sound smooth castings, the details of the patterns carefully preserved, practically indestructible, and in every way more serviceable than posts made of pipe and sheet metal.

Standard designs can be supplied promptly, or estimates made upon special designs upon application. Estimates of cost for any installation will be submitted upon the receipt of plans showing the location of posts and distances.

Our special Light Post Bulletin, upon the subject of Street Lighting generally, with a particular description of our Posts mailed upon application.

MODERN IRON WORKS
QUINCY, ILLINOIS



THE CHAUFFEUR IS THIRSTY

mer, when the fountain is put in commission and at the end of the season when it is removed, and all of this work is done by only an experienced water works man. The fountain is designed, of course, so that it does not interfere with the operation of the hydrant in case it should be needed for fire purposes, or, in fact, for any other legitimate use authorized by the water works authorities. As can be seen in the photographs, a hydrant wrench could be easily applied, without interference, to any one of the nozzle caps and to the operating nut on the top of the hydrant.

The fact that this fountain is not only permitted, but its use approved by the Water Works Department at Rochester, whose duty it is to keep the hydrants in working order, is proof that no detriment to the hydrants is feared. The continual running stream in the fountain, spoken of before, tends to keep the water comparatively cool,



CONNECTION TO THE HYDRANT CAN BE MADE IN A FEW MINUTES

and while, of course, running to waste, the stream is so small that the amount is insignificant when compared to that wasted in the ordinary drinking fountain. There is no nuisance noticeable at all provided there is a gutter or some other means of carrying away the small stream of water running from the waste pipe.

This clever idea of combining hydrant and drinking fountain seems especially adapted to the larger cities where for long spells during the summer the sun beats down on the hot pavements and sidewalks and the pedestrian looks in vain for a convenient drink of water.





Old Way—Corner Arc—wasteful and inefficient—middle of block dark—sidewalks shaded by trees.



New Way—National Mazda Lamps—economical, decorative, efficient—continuous distribution of light.

Don't Waste Light on the Tree Tops

GET your light down to the street, not in spots, but all the way along. Divide up the current you now use in the corner arcs and give it to National Mazda lamps, distributed over the block so as to give continuous illumination.

National Mazda lamps are the highest type of incandescent lamps, and give three times as much light as carbon lamps at the same cost for current. They eliminate all labor of trimming and enable you to place a lamp of the right power, small or large, wherever it is needed. Mounted on standards of approved design, they put the light beneath the leaves of the trees, close enough to the pavement to insure adequate, even, continuous illumination without glare. They cost less to operate and give better light.

NATIONAL MAZDA

THE QUALITY LAMP

Our Street Service Department specializes on municipal lighting problems and will furnish without obligation or expense any information you may require concerning the modern and scientific illumination of streets in either business or residence sections by means of National Mazda lamps. Address

NATIONAL QUALITY LAMP DIVISION

OF GENERAL ELECTRIC CO.

82 NELA PARK, CLEVELAND, OHIO





Monthly and Yearly Fire Losses

| MONTHLY LOSSES | | | | YEARLY LOSSES | |
|----------------|---------------|---------------|--------------|---------------|---------------|
| | 1911 | 1912 | 1913 | | |
| January | \$21,922,450 | \$35,653,150 | \$20,193,250 | 1912..... | \$225,320,900 |
| February ... | 16,415,000 | 28,601,650 | 22,084,600 | 1911..... | 234,337,250 |
| March | 31,569,800 | 16,650,850 | 17,511,000 | 1910..... | 234,470,600 |
| April | 17,670,550 | 16,349,400 | 16,738,250 | 1909..... | 203,649,200 |
| May | 21,422,000 | 21,013,950 | ..... | 1908..... | 238,562,250 |
| June | 20,691,950 | 16,103,450 | ..... | 1907..... | 215,671,250 |
| July | 25,301,150 | 15,219,100 | ..... | 1906..... | 459,710,000 |
| August | 12,662,650 | 14,158,800 | ..... | 1905..... | 175,193,800 |
| September .. | 11,333,250 | 13,779,300 | ..... | 1904..... | 252,554,050 |
| October | 13,945,000 | 13,651,650 | ..... | 1903..... | 156,195,700 |
| November ... | 18,680,600 | 16,172,300 | ..... | 1902..... | 149,260,850 |
| December ... | 22,722,850 | 17,967,000 | ..... | 1901..... | 164,347,450 |
| T'l for y'r. | \$234,337,250 | \$225,320,900 | ..... | 1900..... | 163,362,250 |
| | | | | 1899..... | 136,773,200 |
| | | | | 1898..... | 119,650,500 |

Uses and Advantages of Motor Fire Equipment*

By George W. Booth

Chairman, Committee on Automobile Fire Apparatus, National Fire Protection Association

FIRE apparatus may be divided into three main classes—i. e., Pumping Engines, Hose Wagons and Ladder Trucks; there are subdivisions of all these classes and a few pieces not strictly allied with any one of them.

The automobile pumping engine using the same motor to propel the machine and to drive the pump is accepted by most departments as likely to be the ultimate development, and its perfection is the end towards which most of the manufacturers of fire apparatus are working. It has the advantage over the motor-propelled steam engine of requiring only one power plant and one man to operate instead of two. There has been some difficulty in securing such combinations of gasoline engine, transmission and pump as will operate efficiently and reliably through the wide range of pressures

required in fire engine practice. In order to secure proper capacity and a fair range in pressure, the National Board of Fire Underwriters has recommended the following specifications, which have been adopted and even made more severe in some respects by leading fire departments:

The engine to be able to deliver 700 gallons per minute (or whatever its rated capacity may be) at 120 pounds net pump pressure, and at least 50 per cent of its rated capacity at 200 pounds net pressure, with a maximum suction lift of 10 feet; the length of hose lines and sizes of nozzles to be such that the above results will be obtained, and each test to be of one hour's duration."

The ideal equipment for an engine company in a city able to afford it consists of two pieces, a pumping engine and a combined chemical engine and hose wagon, the latter ordinarily known as a combination wagon. A good arrangement in small or medium-sized cities is to have about half the companies equipped as above, which will

* Extracts from report presented at the Seventeenth Annual Meeting of the National Fire Protection Association, held in New York City, May, 1913.

The Trolley Company Will Co-operate

in your plan to give your town an up-to-date lighting system, and will let you use their trolley poles to secure a "white way."

ERECO Combination Railway and Lighting Poles

It is possible to utilize an ordinary street railway pole in connection with ornamental bases and brackets to support the new inverted luminous arc lamp.

You can string your wires along the top of the poles, where they are practically unnoticeable and out of the way of traffic.

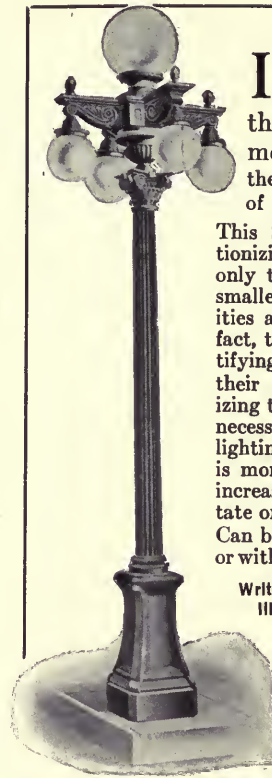
You save the cost of additional lamp standards and underground construction, and avoid further obstruction of the curb line.

Catalog "D" describes this money-saving ERECO Plan—write for a copy.

Design No. 10127

Electric Railway Equipment Co.
Cincinnati, Ohio

DESIGNERS MANUFACTURERS
N. Y. Office, 30 Church Street 3



IN our Ionic Design we offer a standard that is not only ornamental but will give the most Uniform System of Street Lighting.

This Standard is fast revolutionizing street lighting in not only the larger cities but the smaller towns and municipalities and all are waking up to fact, that this means of beautifying the street is not beyond their reach. They are realizing that the small investment necessary to secure adequate lighting through our Standard is more than justified by the increased valuation of real estate on the streets affected.

Can be furnished as illustrated or with all lightsturned upright.

Write for Prices and Catalogue
Illustrating Full Line

**The
Casey-Hedges Co.**

CHATTANOOGA, Tennessee

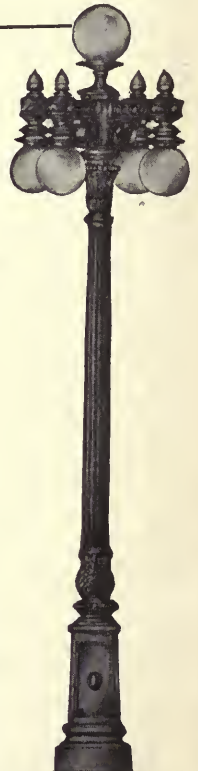
**We are the
Largest Producers of
ORNAMENTAL
LIGHTING
FIXTURES**
for exterior use in the
United States

**WE MAKE A LIGHTING
POLE FOR EVERY
PURPOSE—ARC, TUNG-
STEN OR GAS.**

Unlimited facilities,
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class workmanship.
Over 500 designs to
select from. New cata-
logue now in press.
Write for one.

**The Elmer P. Morris
Iron Works**

92 West Street, New York



furnish adequate chemical service, and the other half equipped with combined pumping engine and hose wagon. This latter piece of apparatus must, of course, be so manipulated at a fire that, after the one or two hose lines needed are stretched from the hydrant to the burning building, the engine will reach the hydrant and connect its suction as quickly as possible. There will naturally be somewhat more delay than if a separate engine and hose wagon are provided; but this delay should not be more than two or three minutes in most cases, even when two lines of hose are laid, as shown by tests of a crew trained to the work.

The triple combination, as it is usually called by manufacturers, consists of a combination of pumping engine, chemical tank and hose body. Most fire chiefs are agreed that this piece of apparatus is not a desirable one for general installation, for the obvious reason that its use in furnishing chemical service precludes its pumping from a hydrant or other source of water supply, at least without considerable delay at what is likely to be a critical moment; and also for the further reason that too much equipment is carried on one set of wheels and is lost to service in case of disablement. However, it has a place in localities where the pump is very seldom needed, as, for instance, in cities where the water pressure is sufficient in most sections for effective direct hydrant streams, but where there are occasional high elevations or weak spots on the water distribution system. It will also take the place of a reserve engine for use at serious fires in high-value districts.

There are no special problems connected with the motorization of the hose wagon; most of them are driven by gasoline motors, although other methods have been used in a few cases. The carrying capacity is very much increased over that of horse-drawn hose wagons, and, as a result, practically all are fitted with chemical tanks and carry greater quantities of hose than was feasible in the past, especially in hilly country. The main points to be considered are believed to be covered by the recommendation included in most of the National Board reports, as follows:

"Automobile hose wagons to have divided hose bodies, with a capacity of at least 1,000 feet of hose when carrying equal amounts of

2½ and 3-inch hose. Motors to be capable of attaining a speed of 30 miles an hour, and of covering 20 miles in an hour over paved or macadamized streets having such grades as the apparatus is likely to encounter in service.

Automobile ladder trucks are propelled in a great variety of ways, and motorizing has, perhaps, increased the efficiency of this type of apparatus to a greater extent than of any other, by extending the radius of action, especially in the case of the heavier trucks and on steep grades, and by facilitating the handling of the apparatus at fires.

Most of the earlier automobile fire apparatus was fitted with pneumatic tires, and some of it is still so equipped; but with the decline of the speed craze some form of solid or cushion tire has come to be considered by most fire chiefs and manufacturers as preferable, from the standpoint both of safety and economy. For the rear wheels, especially of heavier pieces of apparatus, dual tires are used, to prevent skidding and secure greater traction and bearing surface.

Advantages of Automobile Over Horse-Drawn Apparatus

The most obvious advantages of automobile apparatus over horse-drawn are its speed, conducing to promptness of response and to greater radius of action and the ability to continue indefinitely without tiring. It is probably fair to assume that in residential districts sufficiently prompt response for an automobile hose wagon will be obtained within a radius of 1½ miles as against one mile for a horse-drawn wagon; for a ladder truck these distances are approximately 1½ and 2 miles, respectively, the area covered being about doubled in each case.

Of course, this does not mean that the number of companies and amount of apparatus can be reduced correspondingly. In most cities, the response required to handle a bad fire in the various high-value districts will necessitate keeping all existing companies in service; but the establishment of new companies in developing residential districts may be deferred and a lesser number of such new companies will be required. The earlier craze for speeds of 60 miles or so per hour has mostly vanished, and in many of the larger cities apparatus is so geared or provided with governors that a maximum speed of 30 miles per hour or less is obtainable.



Fountain
Plate 613-A

Mott's Sanitary Drinking Fountains

WE are prepared to manufacture Drinking Fountains in all the metals to meet any condition. The illustration herewith shows a fountain recently erected in Johnson City, Tenn.

Write for K catalog

**The J. L. Mott
Iron Works**

Ornamental Dept.

5th Ave. & 17th St.

NEW YORK CITY

85 YEARS OF SUPREMACY



A New Catalogue for You on Ornamental Lighting Poles

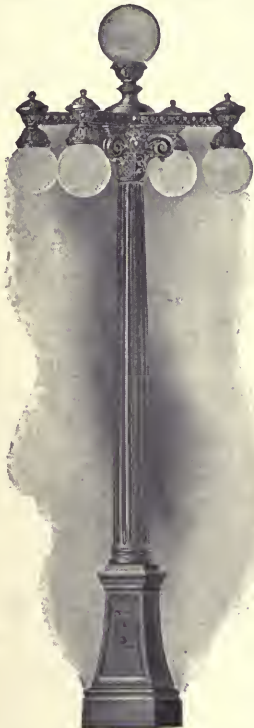
Showing twenty-five up-to-date designs adapted for all conditions, including White Way, Residential and Business Street styles; also Combination Trolley and Light Poles.

If you are interested in efficient street lighting you will find our new catalogue of considerable value.

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Ornamental Lighting Pole Co.

114 Liberty Street, New York City



Another advantage is the ease with which the heavier apparatus, especially ladder trucks and water towers, may be maneuvered at a fire, either in confined spaces or in places where, on account of the heat, it would be difficult to drive horses.

Reliability of Motor Equipment

The question of reliability under varying conditions has been much discussed by fire department officials. It is the general opinion that automobile apparatus, if properly cared for, is at least as free from break-downs and delays as horse-drawn. On bad roads there may be conditions of deep mud, or sand, or deep, soft snow, where horses will struggle through and the automobile will fail, because the wheels are

not able to secure traction; but, on the other hand, if there is any firm bottom which the driving wheels and chains can grip, the automobile will plough through stretches of bad going where horses would certainly become stalled.

The reliability of the gasoline engine for driving pumps, as compared with the steam fire engine, has been questioned, although many chiefs who have used automobile pumping engines under trying conditions are ready to testify as to the effective results. As in any similar case where new problems are presented, considerable time and experimenting are required to develop a satisfactory machine. Much progress has been made in the past year or two, although there is, of course, room for further improvement.



SEAGRAVE TRUCK, WITH GOODYEAR TIRES, IN USE BY THE FIRE DEPARTMENT OF MILWAUKEE



WEBB COMBINATION, WITH FISK TIRES, IN USE IN CHARLESTON, S. C.

Ornamental Luminous Arc Lamp

This lamp is giving the utmost satisfaction wherever any installation has been made.

Business men's associations, civic authorities, property owners, etc., are enthusiastic over the effective illumination by night, and the attractive appearance of the streets by day.

The ornamental Luminous Arc Lamp is the highest development in ornamental street lighting.

The following is a partial list of those progressive cities where these lamps have been installed or are on order.

White Way type for business streets.

Residential type, for residence districts.

Parkway type, for parks, boulevards, etc.

Send for Bulletin 4955.



Akron, Ohio
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Baltimore, Md.
Beverly, Mass.
Biwabik, Minn.
Buffalo, N. Y.
Butte, Mont.
Calgary, Canada
Chattanooga, Tenn.
Cambridge, Mass.
Crookston, Minn.
Detroit, Mich.
De Kalb, Ill.
Dubuque, Iowa
East Liberty, Pa.
Edmonton, Canada
Green Bay, Wis.
Haverhill, Mass.
Holstein Park, Chicago, Ill.
Jacksonville, Fla.
Keokuk, Iowa
Lockport, N. Y.
Lynn, Mass.
Martinsville, Ind.
Missoula, Mont.
Nashua, U. H.
Negaunee, Mich.
New Haven, Conn.
Newport News, Va.
Ocean City, N. J.
Ocean Grove, N. J.
Ogden, Utah
Owatonna Minn.
Providence, R. I.
Rochester, N. Y.
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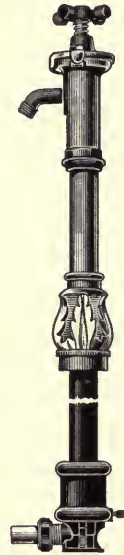


MOTOR FIRE APPARATUS PASSING THE REVIEWING STAND IN THE NEW YORK CIVIC PARADE, MAY 17

Are You Considering the Installation of Lawn Hydrants & Street Washers ?

*Make a Small Job
of that Seemingly Big
Undertaking!*

You can easily provide ample facilities for the sprinkling of streets and walks, and protect Parks, Lawns and Shade Trees against the ravages of the dry and dusty season, by installing



Lewis Patent Lawn Hydrants and Street Washers

Lewis Patent Hydrants and Street Washers are easily installed anywhere. No need to tear up stretches of streets or lawns. Wherever water is piped, at any depth, a Lewis Hydrant or Street Washer can be placed in a few hours at minimum expense for installation.

The working parts of Lewis Hydrants and Street Washers are carefully constructed of best materials and never fail to give excellent service. The graceful, slender appearance of hydrant casings is due to the absence of useless ornamentation. Lewis Hydrants are strong and serviceable without being excessively bulky or clumsy. Both Hydrants and Street Washers have Automatic Duplex Stop Valve and Waste, are **self-draining** and **positively anti-freezing**.

Made by us for years and now extensively used throughout the country.

Manufactured exclusively by

The HAYDENVILLE COMPANY

Haydenville, Mass., and New York

Write to-day for New Hydrant Catalogue L H

The Growing Sanity of Independence Day Celebrations

A BULLETIN issued last month by Franklin H. Wentworth, Secretary of the National Fire Protection Association, contains statistics to show that during the last ten years a total of 39,808 people—the equivalent of nearly forty regiments—were killed or injured in the celebrations of the Fourth of July. A cheering feature of the exhibit is the fact that the figures for the last three years show a marked improvement over the record for Independence Day casualties of previous years. The following table is compiled by the *Journal of the American Medical Association*:

| Year | Dead | Wounded | Total |
|-----------|------|---------|-------|
| 1909..... | 215 | 5,092 | 5,307 |
| 1910..... | 131 | 2,792 | 2,923 |
| 1911..... | 57 | 1,546 | 1,603 |
| 1912..... | 20 | 659 | 679 |

Fire losses on the Fourth last year, as compiled by the *Chicago Tribune*, were \$576,525, which compares with the daily average, for the first five months of the year, of \$778,382. Thus is demonstrated that the Fourth, under the changed conditions, with everyone alert in the cause of fire prevention, can be made a safer day than any other in the year, as regards fire. It also proves that fire prevention really will prevent, and will reduce the fire losses when it becomes a general and active work throughout the country instead of a mere propaganda.

Says Mr. Wentworth, in the above-mentioned bulletin:

"It is, perhaps, too much to expect a complete return to sanity; but some effort at least may be made by all cities and towns toward leading their people into more moderate and more intelligent forms of celebration.* If explosives must be used the authorities can limit their use to the public parks during certain hours of the day, where the folly-hunters may kill and maim themselves and each other to heart's content, without injuring other people, or destroying property by fire. The firing off of explosives among the closely-built shingle-roofed frame houses, which compose the greater part of our cities, is wholly in accord with the reckless spirit of Americans regarding fire.

* See three articles on "The New Fourth—Wiser, Happier Ways of Celebrating our National Independence," in *THE AMERICAN CITY* for June, 1912.—THE EDITORS.]

"If before every Fourth of July all cities and towns were given a thorough cleaning of rubbish, and all use of explosives then restricted as to time and place, the police and public wardens might have at least a fighting chance to minimize the disastrous results of our public folly during the years it may require to inspire in our people a desire for a rational kind of celebration. And such a desire must be inspired. It is the duty of every city to arrange for its people suitable amusements or exercises definitely calculated to educate them in a rational observance of this historic holiday. Habits of folly can be most easily eliminated by a substitution of something better. The things a city can do to interest its citizens in a sane and wholesome celebration are unlimited, and the municipalities which in the past two years have taken steps in this direction are already receiving national praise for their wisdom and their high sense of civic responsibility."

A Model Fireworks Ordinance

The following ordinance is suggested by the National Fire Protection Association, and its immediate adoption is urged in all cities where suitable legislation is not already enacted:

Prohibiting the discharge or firing of fireworks and other pyrotechnic display and to limit their storage.

Be it ordained by of the City of as follows:

SECTION No. 1. The discharge, firing or use of all firecrackers, rockets, torpedoes, Roman candles, or other fireworks or substances designed and intended for pyrotechnic display, and of all pistols, canes, cannons, or other appliances, using blank cartridges or caps containing chlorate of potash mixture, is hereby prohibited. Provided that the may order the public display of fireworks by properly qualified individuals under the direct supervision of experts in the handling of fireworks. Provided also that such display or displays shall be of such a character and so located, discharged or fired as, in the opinion of the Chief of the Fire Department, shall not be hazardous to surrounding property or endanger any person or persons.

SECTION No. 2. The sale of fireworks at retail is prohibited.

SECTION No. 3. The storage or sale of fireworks at wholesale is prohibited, except by permit from the issued for a period of one year. Application for permit must be filed with the Chief of the Fire Department at least 30 days previous to the issuing of the permit and must give detailed description of the proposed care and storage of said materials and of the structural conditions and occupancies of the building.

SECTION No. 4. Permits may be issued only after an inspection of the premises by the Chief of the Fire Department or his authorized agent, who shall file with the Mayor and Fire Department a certificate of approval or his disapproval and reasons therefor.

SECTION No. 5. Any person, firm or corporation violating any of the provisions of this ordinance as regards the storage and sale of fireworks shall be deemed guilty of a misdemeanor and be fined not less than Ten (\$10) Dollars nor more than Twenty-five (\$25) Dollars for each day's neglect of compliance. Provided also that violation of other sections of this ordi-



Sanitary Fountain-Cooler Combination

This is a new and interesting addition to our fountain¹¹ line which we have designed to fill a real need—the dispensing of *cold* water in a sanitary manner. Are you interested?

Write for Catalog of our complete line of sanitary drinking fountains.

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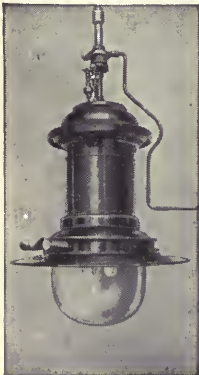
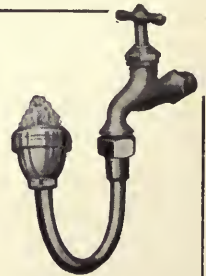
Attached without expensive charges

ASHTON SANITARY FOUNTAINS

Their low cost will surprise and please you.

Adaptable for use in public buildings or parks, schools, factories, etc., and readily attached to ordinary faucets at very slight expense. The illustrations herewith, show two handy methods of applying the fountains. The bent pipe and coupling shown at the right makes a flexible arrangement so that the bubble may be located at any desired position. In the ASHTON you not only have the most economical arrangement possible, but absolute sanitation as well. *Write today for illustrated printed matter.*

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GAS STREET LAMPS

"United" Inverted

Public Street Lighting
our Specialty. Write us.

**UNITED GAS LIGHT
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BONDS

27 years' experience in the manufacture of all kinds of bonds and certificates—including Municipal Government, Public Utilities, Industrial and Commercial—enables us to produce such documents technically, as well as mechanically perfect.

It will be worth your while to consult us on your next issue.

ALBERT B KING & CO INC

204 BROADWAY

ESTAB. 1886

NEW YORK CITY

nance shall be considered a misdemeanor punishable by a fine not exceeding Ten (\$10) Dollars.

The Chief of the Fire Department may, at his direction, remove or have removed, at the owner's expense, all stocks of fireworks or other combustible exposed for sale, or held in stock in violation of this ordinance.

SECTION No. 6. The Chief of the Fire Department shall direct such fire appliances as in his judgment may be necessary for the premises, and he shall see that

two or more persons are instructed in their use, and as to the best means of getting fire alarms to the Fire Department.

SECTION No. 7. All ordinances and parts of ordinances inconsistent herewith are hereby repealed.

SECTION No. 8. This ordinance shall take effect and be in force from and after its passage and legal publication.

The Lighting of Olympia's Business District

By H. L. Whiting

Secretary, Chamber of Commerce, Olympia, Wash.

About a year ago a campaign was inaugurated by the Olympia Chamber of Commerce for a better lighted business district. The subscription plan was used and the merchants subscribed readily.

Poles already on the streets were used and four arches were placed to the block, each arch containing ten 40-candlepower Mazda lamps. The arches are uniform in height and extend for eight blocks down Fourth Street and the full length of Main Street. On the corners there is one arch at each intersection, or four arches at each corner. These, together with the arc lights which have been in use for years, make the business district of Olympia ablaze every night.

Olympians were quick to realize the bene-

fit of the lights when installed, and when asked subsequently by the Chamber of Commerce the City Council gladly took over this lighting system. To-day the city is paying for the current and up-keep.

In requesting Council to take this action, the Chamber of Commerce felt it was no more than right that the taxpayers should assume the burden, for everyone who has a dollar invested in the city has realized the benefits accruing from this step towards making Olympia a twentieth century city. The retailers have found that while it is true that "printer's ink makes millions think," it is also true that "electric lights keep crowds out nights," and therefore the general business of the entire city is stimulated.



OLYMPIA'S GREAT WHITE WAY IS A SUBSTANTIAL ASSET TO THE CITY

The Last Word in Drinking Fountains

SELF CLOSING
SAVES WATER, SAVES TIME,
REMOVE THE HAND
AND THE FLOW STOPS

SANITARY BECAUSE
IT IS WASHED WITH
FLOWING WATER
EVERY TIME IT IS USED

WHITE PORCELAIN
IRON ENAMELED

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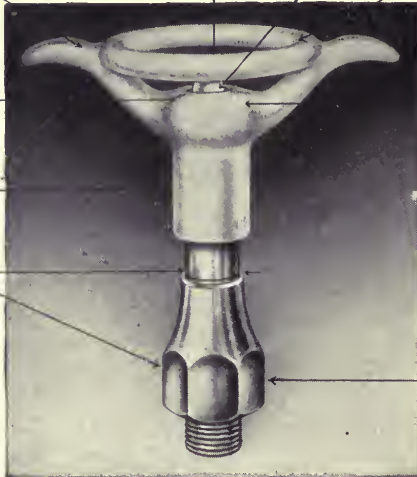
BUBBLE RISES
ONE AND ONE HALF INCHES

YOU CANNOT SQUIRT
THIS FOUNTAIN

THIS RING PREVENTS
THE LIPS FROM COMING IN
CONTACT WITH THE NOZZLE

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CONCEALED PRESSURE
VALVE REGULATES TO ANY
PRESSURE SO THAT BUBBLE
CANNOT GO HIGHER THAN
ONE AND ONE HALF INCHES



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D. C. PAT. JULY 8, 1911

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Capital and
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Municipal Bonds

Will you write us for an estimate of
the cost of issuing the next lot of your
bonds under our protective method?

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IT IS POSSIBLE

to use our

**Sanitary
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**Old
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**Sanitary
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*Write for drinking
fountain catalogue.*

EDWARDSVILLE BRASS CO.,
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Portland's Successful Campaign for Commission Government

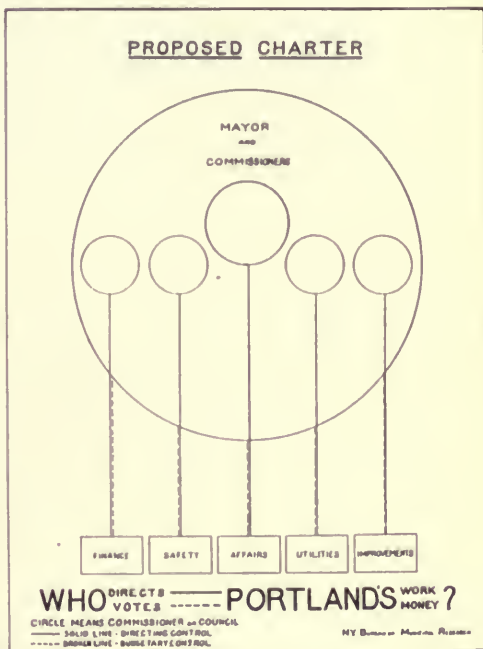
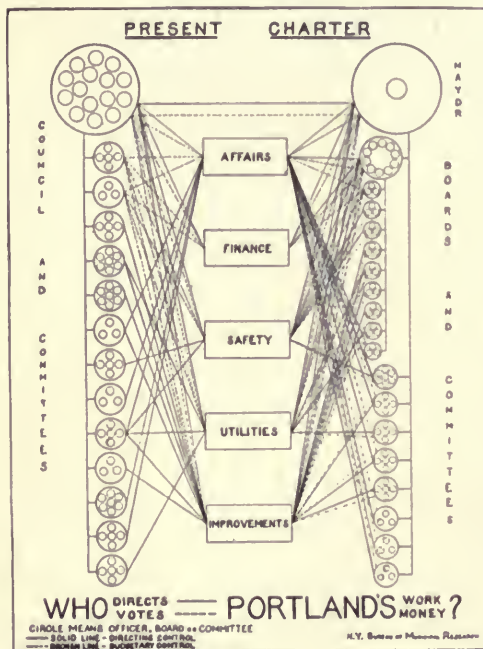
At a special charter election on May 4, the city of Portland, Ore., was added to the steadily growing list of municipalities which have adopted the commission form of government.

The enactment of the new charter automatically abolished the primary nominations for all offices, the choice prescribed being a nonpartisan preferential election for mayor, auditor and four commissioners, who are elected from candidates each nominated by a petition of at least 100 voters. This election will be held in June.

As Oregon municipalities have absolute home rule, changes in any city charter are determined by the local electorate. Appreciating the need of a campaign of education and publicity to ensure a favorable vote at last month's election, a committee of citizens, headed by W. B. Ayer, enlisted the cooperation of the New York Bureau of Municipal Research. The Bureau's director, William H. Allen, made a special trip to Portland, and for three weeks prior to the election there were published in the local newspapers critical analyses showing

the impossibility of securing efficient and economical administration under the old charter. These reports proved very effective, and of especial value in arousing public interest were two charts of which reproductions in reduced size are here published. Under these charts were printed the following explanation:

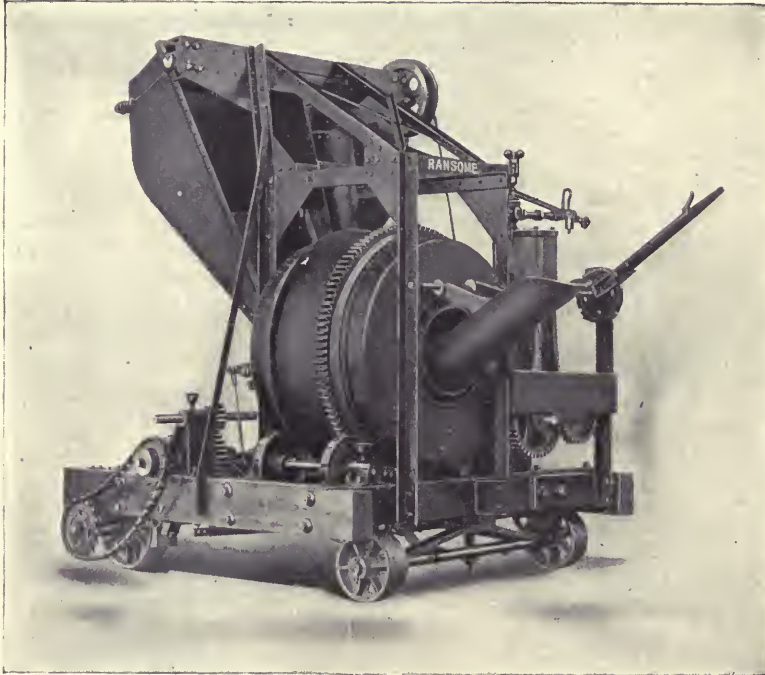
"Charts showing weakness of city government under present form and advantages promised by the proposed commission form. The chart at left indicates tangle existing now. Note clearness and concise rule as shown by the commission form chart at the right. Under the commission form voters have chance to get facts necessary to hold officials accountable for fulfilling pledges. The unbroken line indicates that the officer, committee or board, represented by the circle where the line connects with one or more of the squares, has power and duty to direct the work, refuse to do the work, or to do it inefficiently. The broken line indicates that the officer, committee or board has budgetary control over the different kinds of city work represented in the squares which the broken line leads to, i. e., may vote too much or too little money for each general activity or any class of work within that activity; means, again, that these



CHARTS USED IN PORTLAND'S COMMISSION GOVERNMENT CAMPAIGN

HERE'S THE NO. 60
RANSOME STREET MIXER

*It means the entire elimination of some of
your paving and road building troubles*



Whether you are an official in a big city, or a small city, or a growing town or village, you have the problem of street construction and maintenance to face.

Do you know how much the No. 60 Ransome Street Mixer can do to reduce the cost of your pavements and roads and to make them more solid and durable?

The slip below, if cut off and mailed to the Ransome Concrete Machinery Co., Dunellen, N. J., will bring the "Ransome Red Book."

Cut Across Here

 RANSOME CONCRETE MACHINERY COMPANY, Dunellen, N. J. 

Please send to the address in margin below a copy of the "Ransome Red Book" as advertised in THE AMERICAN CITY.

particular circles must be consulted before money can be obtained. Both charts, describing the present plan and the proposed new plan of government, are made on identically the same principle; circle means responsible officer, unbroken line means power and duty to direct, broken line means financial, *i. e.*, budgetary control."

In addition to this newspaper publicity, two charter campaign committees presented through public speakers, "circulars" and otherwise, the advantage which would follow from the adoption of the new charter. The public, being thus fully informed, was enabled to act intelligently. And it did so.

Building a Public School to be a Recreation Center*

By Mrs. Desha Breckenridge

IN the small town, which I come from, Lexington, Ky., with about 40,000 inhabitants, we have built a public school in which we take much pride. It is in the very poorest section of the town. The school board had but \$10,000 to put into the school. Some years before, the Civic League of Lexington had established a playground in this section; then a little vacation school, with cooking, sewing and carpenter work, and finally it convinced the School Board of the need of a public school there.

As the years went by and the playground was continued, we began to feel that not only a public school, but a public school of a very unusual kind was needed in that section. There was no place for social gatherings except a saloon or a grocery with saloon attachments. The young people were going up-town to the skating rinks and the moving-picture shows, and a little later we were dealing with them through the Juvenile Court. And more and more it was borne in upon us that though we might do our best through the Juvenile Court and the Reform School to repair the damage done, a cracked vase, no matter how well mended, could never be as good as a whole one; and that the sensible thing to do was to keep these children out of the Juvenile Court and the Reform School. The School Board simply had not the money to build the sort of school we wanted, nor had it the necessary conviction and faith that a poor part of the town needed so expensive a school. So when we had gotten the board to appropriate the last remaining

\$10,000, we started out to add to that sum \$25,000, raised by popular subscription, and went to work on the plans for a school building which would not only allow the teaching of reading, writing and arithmetic, but would have a kitchen, a carpenter shop, a laundry, a gymnasium, shower baths, a swimming pool and an auditorium with a stage.

We went to the "professional philanthropists," and after we had been turned down by most of them we came back to our own people—with just enough help from a few generous outsiders to give standing at home—and raised a large part of the money by a whirlwind campaign, such as the Y. M. C. A. has tried in many places. We could not stop at \$25,000; the school and grounds have now cost about \$45,000, and we know so well the places we could use a few thousand more!

We began teaching school in the new building last September; it is full of children and is a joy forever. The swimming pool, the crowning glory, is not yet completed, for we had to contract for things whenever the money was in bank, and all trimmings were postponed as late as possible. The shower baths are in full effect. The laundry is being used not only to teach the school children how to wash and iron, but the mothers of the neighborhood, who bring their washing in, pay so much a wash for the use of the water and the steam drier and the beautiful ironing boards, with gas burners at the end. The big room, with the stage at the end, which serves for kindergarten in the morning and gymnasium in the afternoon, is a story and a half high, and is used for theatrical performances and

* From a paper read at the Recreation Congress in Richmond, Va., May, 1913.



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IN YOUR PONDS, STREAMS OR LAKES, BY THE
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Used by Park Departments, U.S. Government, and others with entire success. The weeds are cut off at the roots and then float away as shown in the illustration. Send for interesting illustrated circular.

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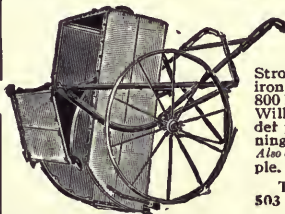
UGITE has been successfully used on every type of road construction and is prepared in six grades, for hot or cold application, to meet varying conditions or methods of treatment. Our Road Department is at your service for the solution of any problem of road construction and maintenance. Write for explanatory booklets today.

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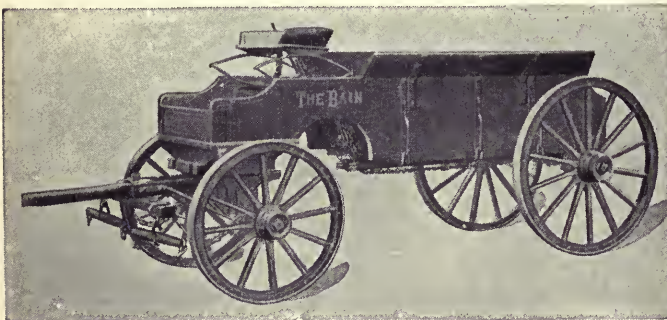
The Witten goes anywhere—handles any material. You load—it dumps automatically. Can't get out of order. Has many farm uses. Does work of extra man



**Witten Automatic
Dump Cart**

Strong, malleable iron frame—iron-bound wood box. Capacity 800 lbs. 3-ft. wheels, 2-in. rims. Will not cut sod. End gate under perfect control. Light running. Costs little. You need one. Also one horse carts on same principle. Write for free folder NOW!

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If you use dump wagons or if you are thinking of buying dump wagons send for illustrated description of the

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which meets every requirement.

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Main and Pearl Sts. KENOSHA, WIS.



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The World's Leading Explosive
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Excavating for Road Construction, Removal of Obstructions in Public Parks, Tree Planting, Rejuvenation of Trees, Subsoil Improvement and Drainage.

Ask for Handbook of Explosives No. 406
relative to use of Red Cross Dynamite.

E. I. du Pont de Nemours Powder Company

Established 1802

Wilmington, Delaware

dances at night. It is running full blast. We have various night clubs already started, but we could have more—and will have more when there is a little more money to pay for supervisors, or a little more time to drum up and keep in line volunteer helpers. But, even now, the school has demonstrated that the evening is the best time, not only for reaching the fathers and mothers of the school children, but the young people—girls who work in the laundries and in the stores at \$3.50 a

week, and who have no place to go for dancing and other recreation, and the young men from 20 to 35, working at the distillery or the tobacco warehouses.

Evening is without doubt the great time to offer recreational opportunities to working people. Most of them cannot get these except in the evening, and the meeting at the school house is a social event; it is of all others the time when teachers and settlement workers may make connection with the parents and those over the school age.

How to Secure a Large Attendance at School Social Center Meetings*

By John H. Chase

Supervisor, Youngstown Ohio Playground Association

We studied the history of the movement in other cities:

(1) Some had moving picture shows. These drew the crowds, but in material were little better than a commercial picture theater.

The attendance was good, the material poor.

(2) Other cities had lectures. These gave material that was worth while, but the audience was small, or exceedingly hard to accumulate. Advertising was expensive, difficult, discouraging.

The material was good, the audience poor.

(3) Parent-teachers' associations brought the school and home together; but they only met a few times a year (generally in the afternoons), and the parents were almost entirely of one sex.

The quality was good, the quantity poor.

(4) A few centers (and many social settlements) had adult clubs, with self-activity, business meetings and "local talent." Their danger was that they would be crude and unruly. Their good features increased interest, growth and self development.

We considered these different activities and decided we would try to wrap them all in one bundle and deliver the whole package at each meeting.

We, therefore, bought a home kinetoscope moving-picture machine, which was cheap,

easy to run and could be carried from school to school. This brought the crowd. Early in the fall, before the leading men of the city were tied up with engagements, we got the most noted of them to promise to speak—and never to talk over 20 minutes. This last was very important. This gave good material.

We organized local committees which helped in the management of the crowds, and secured local talent, such as reciters, singers, bands, clog dancers, and Indian club swingers. This gave enthusiasm and self-development.

Finally we pledged the superintendent of schools and the manual training, domestic science and physical training teachers to tell of their work, which added the parent-teacher idea.

The moving pictures caught the crowd, the lectures gave something worth while, the school authorities a schoolhouse tie, and local committees gave interest and self-development. We put all of these on (in short numbers) at each meeting.

As a result our attendance averaged over 200 a night and we often turned away as many more. We had to buy twice as many chairs as we had expected; and in plans recently submitted for a new school building the architect won who included a social center hall, with a seating capacity of 400, it being stated that this suggested hall was the chief reason for accepting his bid for the new school.

* Abstract of a paper read at the Recreation Congress in Richmond, Va., May, 1913.

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Here, at last, is the very machine that home owners, park superintendents, greens committeemen and others interested in big lawns or parks have been looking for. Never again is it necessary to have the lawn tracked up by horses pulling a lawn mower—nor need the beauty of your place be marred because the man-power mowers can cut so little in a day. With the

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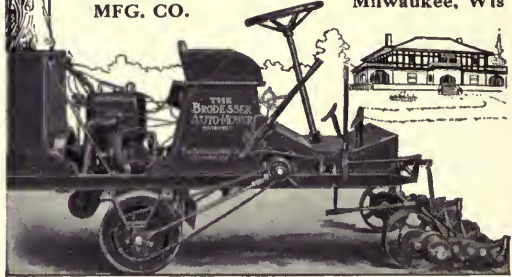
the whole lawn can be mowed quicker, cheaper and better than you ever thought of. Cuts the grass and rolls the lawn in one operation. Easiest running, cleanest cutting power mower ever invented. Weighs only about 1200 lbs. and does not kill the grass. Simply and substantially made. Steers by means of front wheels. Three-point suspension gives flexibility. Is not expensive and will pay for itself by the great saving of labor.

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93 TROYS

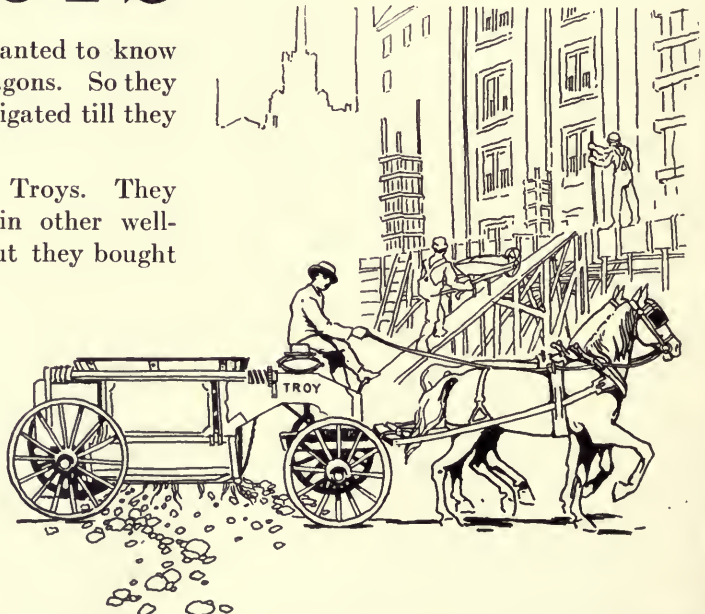
Two firms in Detroit wanted to know the truth about dump wagons. So they went together and investigated till they knew.

Then they ordered 93 Troys. They had been using a certain other well-known make for years, but they bought Troys, and paid more.

Ask for Catalog K—we'll tell you who the Detroit firms were, and just what they bought.

The TROY Wagon Works Co.

Water Street, Troy, Ohio



Items of Civic and Municipal Progress

Chicago's Vice-Committee Opposes Segregation

That "segregation does not segregate, nor does regulation regulate," is an important feature of the findings of Chicago's vice committee as reported to the City Council on May 5. On this subject the report says:

"Abundant evidence was furnished that all efforts in Chicago or elsewhere to restrict the business within a given zone have always resulted in its spreading to other districts, the recognized district becoming a feeder for other neighborhoods."

In brief, the recommendations of the committee are:

That vice be annihilated wherever found.

That apartment houses supposed to be used for immoral purposes be carefully watched by the police, and that arrests be made so often as to make the business unprofitable.

That parents and children be instructed in the sex problems.

That employers protect their girl workers.

That applications for marriage licenses be publicly announced in advance of the granting of such licenses.

✦ ✦

How Vacation Schools Are Affecting Elementary Education

That over 450 buildings were used as vacation schools in 141 American cities last summer is shown by a report just issued by the Department of Recreation of the Russell Sage Foundation. In most of these cities classes continued from six to ten weeks, sessions being held usually five days per week. Important effects upon educational theories resulting from experience gained in vacation schools are summarized in the report as follows:

1. Vacation schools have demonstrated the kind of school activity that secures the pupil's enthusiastic attendance, even under unpropitious weather conditions.

2. They have proved that the summer months can be used by pupils in making up deficiencies in studies or for getting ahead in them.

3. Their success has paved the way for the all-year school.

4. Regular school work during July and August need not be harmful to the pupil's health.

5. Teaching voluntary pupils during the hot months does not necessarily hurt the teacher.

6. A large proportion of the pupils want to attend school during vacation time.

7. Teachers of summer courses get experience which causes them to want to vitalize and make more practical the instruction of the other ten months.

✦ ✦

For Improving Philadelphia Streets

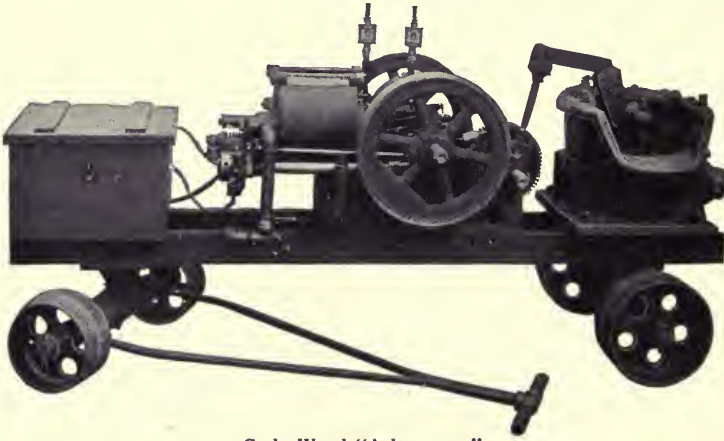
An educational campaign for improving the condition of the streets is being carried on by the Home and School League of Philadelphia, of which Mrs. Edith W. Pierce is Executive Secretary. The undertaking has the approval and coöperation of William H. Connell, Chief of the Bureau of Highways and Street Cleaning, and the Bureau stands ready to place at the disposal of any organization or meeting a lecturer who will explain the plans with the aid of stereopticon slides, if needed, and show how the householder can assist without great inconvenience or labor. The women of the city are especially urged to engage earnestly in this movement, which touches so closely the health and environment of the children and the comfort of all homes. The plan includes the formation of children's street improvement clubs, or among older boys a "Corps of Cleanly Cadets." Return post cards are sent out, which, when filled out and returned, are filed as registration cards bearing the names, addresses and organization connection of those who will give volunteer attention to reporting cases that should be remedied and to arranging for talks on the subject in their own school districts.

✦ ✦

The Pageant of Meriden

Meriden, N. H., is the location of Kimball Union Academy, which this year celebrates its 100th anniversary. The Academy is working out the true function of education in the new country life of America. It is intent on the purpose that the education there offered to the young people of the surrounding agricultural region shall really prepare them for the life they are going to lead and train them to make of the life on the farm a high source of joy, culture, and inspiration for fine citizenship.

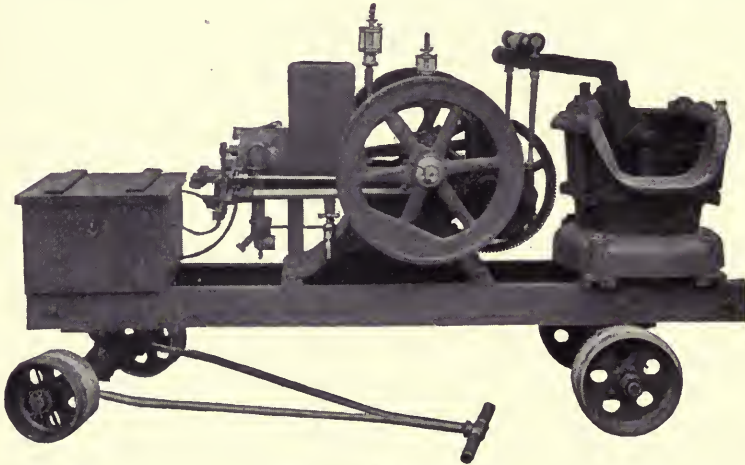
ATLANTIC DIAPHRAGM PUMPING ENGINES



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3-INCH PUMP

ENGINE 3½-INCH BORE, 3½-INCH STROKE

Water hopper cooled cylinder. Automatic governor. Jump spark ignition. Geared 10 to 1. Pump speed, 40 to 50 strokes per minute. Consumes one pint of gasoline per hour. Pump 3-in. side inlet with guaranteed diaphragm. List Price, \$150.



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OUR OFFER: We will send an **Atlantic Pumping Engine** to any responsible party with the privilege of five days' trial. If it is not exactly as represented and superior to other equipment of its kind, it may be returned to us and we will pay freight both ways.

Telegraph or write for net prices and full description.

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Manufacturers of

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NEW YORK

Ross Concrete Spade, Andrews' Concrete Tamper, Safety Trench Braces, Felton's Sewer and Conduit Rods and Pearl Brand Suction Hose.

The history of this town and its academy, therefore, form the subject matter of the pageant drama which will be given June 24-25, under the direction of William Chauncy Langdon.

All the people of the village and of the Academy will take part. It is a community affair. The pageant grounds are on the side of a hill, looking across the valley to the hill top on which Meriden and the Academy stand, and to the lofty height of Ascutney rising beyond. The music has been composed by Arthur Farwell, and the dances devised specially for this pageant. Mrs. W. C. Langdon has charge of the costumes and Miss Madeline Randall will direct the dances.

+ +

The Chicago Municipal Reference Library

On April 1 the Chicago Public Library, at the solicitation of the Chicago City Council as expressed in an ordinance to that effect, took over the control of the Municipal Reference Library in the City Hall, which will be operated hereafter as a branch of the Public Library. The Municipal Reference Library is similar in purpose to the libraries of this character established in the cities of Baltimore, Kansas City, Milwaukee, Minneapolis and St. Louis. It is engaged in collecting, indexing and preserving all data obtainable relative to the operation and government of municipalities, such as reports, ordinances, statistics, books, bills, documents and magazines. This material, while chiefly intended for municipal officials, is also available to any citizen, civic organization, representative of the press, and all who desire information on any function or phase of city government. It is located in Room 1005, City Hall.

+ +

Merit System Adopted in Pittsburgh

Beginning May 1 the merit system of keeping efficiency records of Pittsburgh municipal employes went into effect. The records of every employe, from bureau chief to day laborer, will be kept in a card system under the supervision of the Civil Service Board and will be the basis for promotion or dismissal. Daily, monthly and semi-annual reports are to be made, and the copies of these are to be filed in the office of the Civil Service Commission.

A Sink for Picnic Parties

Every woman who has shared in the responsibilities of a picnic party knows the unpleasant feature of the close—the packing away in hampers of a collection of unwashed dishes. They are disagreeable to carry, and by the time home is reached they are sticky and dry and hard to cleanse. The city of Pomona, Cal., has won the gratitude of the ladies by installing a concrete sink in the park, with liberal room on the boards on both sides for the picnic



A SINK FOR PICNIC PARTIES

dishes, and a tap with running water, where the utensils may be cleansed before packing into the baskets. A large stove is also provided, on which water can be heated both for coffee and dish washing, and where the rubbish from the park can be used as fuel.

C. L. EDHOLM.

+ +

The Springfield Municipal Group

The new municipal group in Springfield, Mass., a view of which is reproduced on page 613 of this issue through the courtesy of *Western New England Magazine*, has, in spite of much opposition, become a reality. Its beauty and dignity are widely acknowledged. Pell & Corbett, of New York, were the winners of the architectural competition for this group, held five or six years ago. Springfield's permanent Building Commission, which accomplished this



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BY THE USE OF

The Etnyre Uniform Pressure Street Flushers

Which will show from 30 to 50% greater efficiency than any other type.

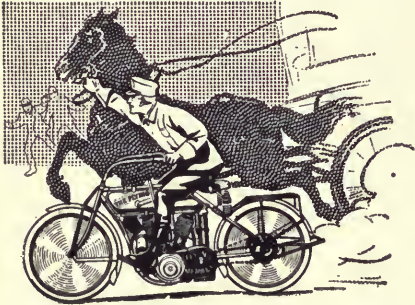
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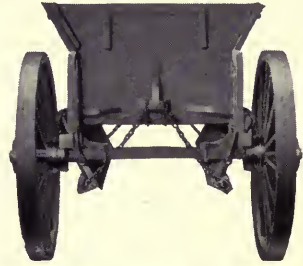
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| 1102 Farmers Bank Bldg. | - | - | Pittsburgh, Pa. |
| 1391 Main St. | - | - | Buffalo, N. Y. |
| 604 Witherspoon Bldg. | - | - | Philadelphia, Pa. |

undertaking, is composed of George Dwight Pratt, William G. McKechnie, Walter H. Wesson, J. Frank Drake and George W. D. Upton.

+ +

Planning Boards Made Mandatory in Massachusetts Cities

By an act of the Massachusetts Legislature, every city of the Commonwealth, and every town of over 10,000 population, is authorized and directed to create a city-planning board. The act outlines the duties of the board and its method of appointment as follows:

"The duty of the planning board shall be to make careful studies of the resources, possibilities and needs of the city or town, particularly with respect to conditions which may be injurious to the public health or otherwise injurious in and about rented dwellings, and to make plans for the development of the municipality with special reference to the proper housing of its people. In cities, the said board shall be appointed by the Mayor, subject to confirmation by the Council, and in cities under a commission form of government, so-called, the members of the board shall be appointed by the governing body of the city. In towns the members of the board shall be elected by the voters at the annual town meeting."

+ +

Metropolitan Planning District Created for Philadelphia Suburbs

The movement for a comprehensive planning scheme for the Philadelphia suburbs, the progress of which has been recorded from time to time in *THE AMERICAN CITY*, has been successful. The Ambler bill, providing for the appointment of such a commission, was passed by the Pennsylvania Legislature last month and has been approved by Governor Tener.

By the terms of the act, a metropolitan planning district is created within a radius of 25 miles of Philadelphia. The Governor is authorized to appoint a commission of 15 members, 12 of whom are to be residents of the suburban district embraced and three of Philadelphia.

The commission is to have charge of a department of suburban metropolitan planning, the purpose of which is to perfect plans for improvements of mutual benefit to the citizens of Philadelphia and of the nearby suburbs. No salaries are provided for the members of the proposed commis-

sion, but the bill provides that a tax not to exceed one-tenth of one mill may be levied to defray the expenses.

The commission is empowered to take up the questions of transportation, highways, roads, parks, parkways, water supplies, sewerage and sewage disposal collection and disposal of garbage, housing, sanitation and health, playgrounds, civic centers and other public improvements. Its plans will be at the disposal of any community in the territory affected, but adoption of them is purely optional with the communities.

+ +

Growing Interest in Social Surveys

Interest in the social survey as a means toward city improvement grows apace. This is definitely shown by the fact that citizens and organizations in as many as 100 cities, scattered through 34 states, have requested the Department of Surveys and Exhibits of the Russell Sage Foundation either to come and survey them or to advise them in starting a local survey movement. Many of these requests are backed by the local commercial organizations, chambers of commerce and boards of trade. The value of the survey from a business point of view—in giving the city commercial advantage through making it a better, healthier and more comfortable place to live in—is receiving increasing recognition in these quarters.

Two kinds of field work in surveys have been engaged in by the department—"pathfinder's surveys" and "preliminary surveys." The former are quick diagnoses of local conditions showing the need of the longer and more intensive survey. They gather enough local facts to indicate the main lines of investigation which should be taken up later, the probable time necessary and the probable cost. The preliminary survey is aimed at three kinds of results: First, to furnish a sufficient body of local facts to permit the planning of an intelligent program for community advance for the next several years; it not only shows liabilities, but community assets—the forces to build on and to build with, as well as what to build. Second, it is a means of enlisting public support for measures which champion human welfare. Third, it collects sufficient data to point out the problems which need thorough or continuous investigation.

A REAL ROLLER

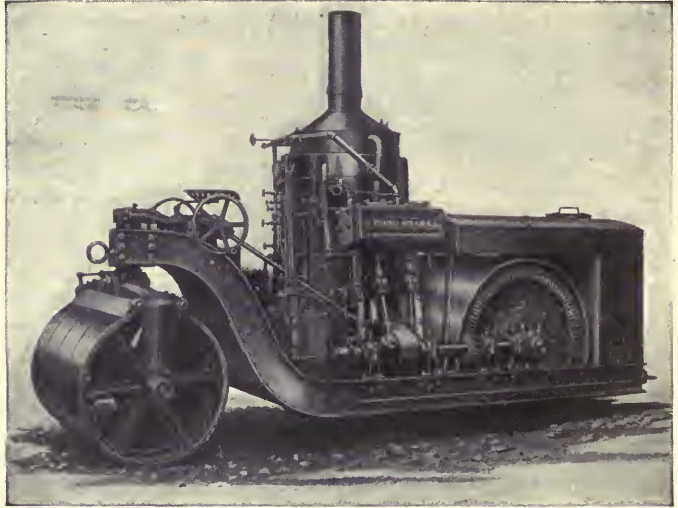
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is better built, develops more power, is more easily operated and controlled, and will last longer than any other roller of this type.

This roller can be used in rolling park and cemetery drives, repairing brick and macadam streets, and in laying asphalt.

No town or city should be without a tandem roller. THE MONARCH is the roller.

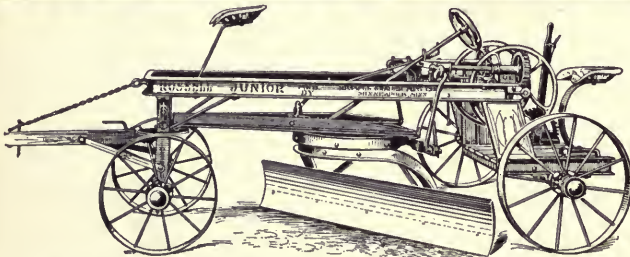


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This type machine also made in two larger sizes. "Standard" for eight horses, weight 3000 lbs., and "Traction Special," for engine power, weight 3500 lbs.

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We make a full line of earth handling and road building machinery, as well as Corrugated Metal Culverts, Culvert Moulds, Steel Bridges, etc. The machine line consists of elevating graders, road machines of all sizes, buck scrapers, wheel and drag scrapers, road and railroad plows, road drags, grader disc plows and snow plows for sidewalks.

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Conventions and Exhibitions

The Fifth National Conference on City Planning

The successful conference held in Chicago, May 5-7, served to emphasize the growing popular interest throughout the United States and Canada in city planning, and the increasing attention paid by city planners to the fundamentals of their profession. The subjects which aroused the liveliest discussion were such questions as planning improved means for the transportation of passengers and freight; the financing of parks and boulevards; the regulation of building heights and area; the organization and functions of city-plan commissions, and the coöperative study for the development of a tract of urban land. To all of these subjects space is given elsewhere in this issue.

Other noteworthy papers included "A City-Planning Program," by Frederick Law Olmsted;* "The Progress of the Year in City Planning," by Flavel Shurtleff, Secretary of the Conference; "The City Scientific," by George B. Ford of New York; "A Survey of the Legal Status of a Specific City in Relation to City Planning," by Edward M. Bassett of New York; and "Some Phases of City Planning, with Reference to the Plan of Chicago," by Edward H. Bennett of Chicago. At the annual banquet the toastmaster was Howard Elting, President of the Chicago Association of Commerce, and the principal addresses were made by Charles H. Wacker, Chairman of the Chicago Plan Commission; Dr. Werner Hegemann, of Berlin; and Lawson Purdy, of New York.

An automobile tour on the first afternoon of the conference gave to the delegates a comprehensive idea of the extent and beauty of Chicago's park and boulevard system, and an insight into some of the future developments which are planned for the city.

A significant feature of the conference was the progressive attitude taken in the discussion by certain prominent real estate operators. It was shown, for example, that the Kansas City method of assessing land values for the cost of parks and boulevards,

as described in Mr. Kessler's paper in the present issue, is favored by landowners in preference to the voting of bond issues. So satisfactory, indeed, has been the Kansas City plan that the Park Department of that city is frequently petitioned by real estate men to lay out additional parks, with the well-founded expectation that the resulting increases in land values will much more than pay the assessments imposed. In the discussion on the laying out of new urban areas, an operator of wide experience declared well-planned developments to be more profitable than the gridiron system of streets as a real estate proposition.

A valuable report was submitted by the Committee on Legislation, in the form of a pamphlet containing several suggested forms of city planning legislation. These include proposed acts for the creating of city planning departments; permitting excess condemnation; creating metropolitan planning districts; permitting the regulation of building heights; authorizing the platting of civic centers; establishing of building lines, etc.

The annual election of officers resulted in the choice of Frederick Law Olmsted, of Brookline, Mass., and Nelson P. Lewis, of New York, to succeed themselves as Chairman and Vice-Chairman of the Conference for the ensuing year.



Art Commissions Confer

The first American Conference of Art was held in New York City on May 13. Delegates assembled from various cities throughout the country, including Denver, St. Louis, Chicago, Rochester, Washington, Baltimore, Philadelphia, New Haven and Hartford. These represented about twelve of the seventeen city and state art commissions. These seventeen art commissions have a membership of about 100, of which number 40 were in attendance at this conference. The forenoon session was held at the City Hall, when the function, organization and powers of city art commissions were discussed.

The delegates were then taken in 'buses to the Metropolitan Museum of Art for luncheon, after which the afternoon session was held there and state art commissions were discussed. The conference con-

* As previously announced, Mr. Olmsted is to contribute an article for an early issue of *The American City* as one of the series on "What to Do and How to Do It." His Conference paper will be used as the basis for this article, and therefore is not published in the present issue.

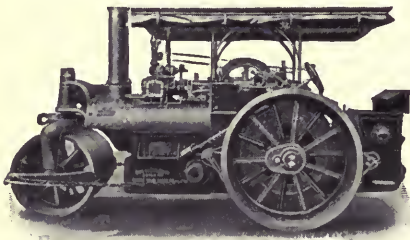


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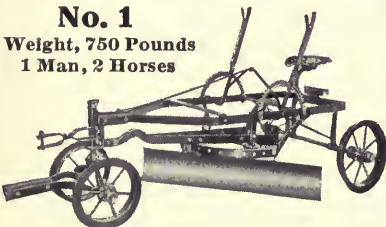
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GRADER — LEVELER — DITCHER

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Weight, 750 Pounds
1 Man, 2 Horses



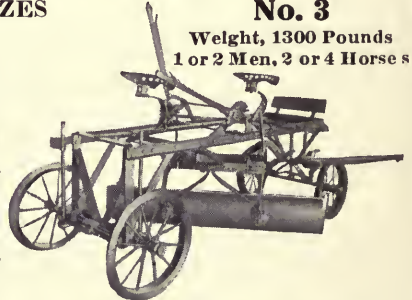
dig a V-shaped ditch from 14 inches to 30 inches deep. Flanged wheels. Will not skid. Pivot axle. Frame 30 inches from the ground. Direct lever connection with blade permitting instant operation.

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Weight, 1300 Pounds
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cluded with a dinner at the University Club.

The conference was held upon the invitation of the Art Commission of New York City and its associates. No set papers were presented, but many topics were discussed. Among them may be mentioned the veto power of commissions, whether it should be absolute, suspensory, or whether their powers should be advisory; the methods of establishing commissions; the functions and scope of state commissions, the advisability of extending the jurisdiction of commissions so as to include buildings along lines of newly laid out parkways.

Naturally, one of the best features of the conference was the interchange of informal opinions among those in attendance around the luncheon and dinner table.



The School Hygiene Congress

The Fourth International Congress on School Hygiene—the first of its kind ever held in America—will convene in Buffalo, N. Y., August 25-30, under the patronage of the President of the United States. It is intended to bring together a record number of men and women interested in improving the health and efficiency of school children, and to make the Congress of direct benefit to individual communities.

A comprehensive program of papers and discussions covering the entire field of school hygiene is being arranged, and there will be scientific exhibits representing the best that is being done in school hygiene, as well as commercial exhibits of practical and educational value to school people. It is planned to entertain the delegates with receptions, a grand ball, a pageant in the park and excursions to the great industrial plants of Buffalo, as well as to Niagara Falls and the Rapids. Buffalo itself has just taken up a collection of \$40,000 to cover the expense of the Congress.

Delegates will attend from all the leading nations, from every college and university of note in this country, and from various other educational, scientific, medical and hygienic institutions and organizations. The Congress is open to all persons interested in school hygiene. Membership may be secured on the payment of a \$5 fee. Applications should be sent to Dr. Thomas A. Storey, College of the City of New York, New York City.

United States Good Roads Association

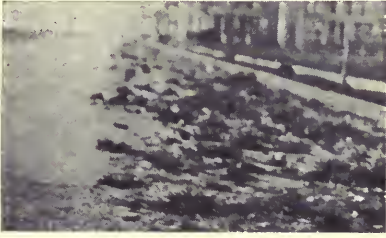
This is the new name of the National Good Roads Federation. The meeting of the Association, held in Birmingham, Ala., April 24 and 25, was attended by 880 delegates from 24 states, and was presided over by United States Senator John H. Bankhead, of Alabama. The secretary of the meeting was J. A. Rountree, Secretary of the Alabama Good Roads Association. The object of the United States Good Roads Association is "to promote immediate federal legislation in behalf of an adequate system of good roads." The membership fee for regular members is \$1; sustaining members may pay such sums in excess of \$1 as they agree. The annual dues are \$1. Among the resolutions passed were, in effect, the following: that a committee be appointed to go to Washington and present to the Committees of Congress and to the Administration the expression of the Association urging federal legislation in behalf of a general system of good roads to meet present and future demands; also that each state should establish an adequate state highway department; and that delegates be sent to the Third International Roads Congress in London in June. The following officers were elected:

President—Senator John H. Bankhead.
First Vice-President, Dell M. Polter.
Second Vice-President—E. J. Watson.
Third Vice-President—John W. O'Neill.
Treasurer—J. A. Rountree.
Secretary—Judge W. I. Grubb.
Managing Director—Thomas L. Cannon.



Chiefs of Police to Gather

The International Association of Chiefs of Police will meet in Washington Monday, June 9, and continue in session for five days. There will be daily sessions of the Association, police papers will be read and topics discussed. There will be a meeting of the Board of Governors of the National Bureau of Criminal Identification, and the Chamber of Commerce and the President of the Association will entertain the visiting members in a program which will involve a trip to Mount Vernon and other historical spots in and about Washington. There will be an exhibit of police appliances at the Chamber of Commerce Hall, which will perhaps prove more interesting than any that has been put forward at former conventions.



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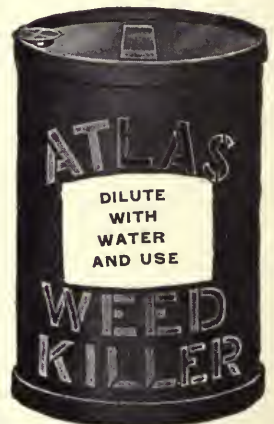
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SOME COMING EVENTS

JUNE 5-7.—CHARLESTON, S. C.

Southern Commercial Secretaries' Association. Secretary, A. W. McKeand, Raleigh, N. C.

JUNE 5-7.—BINGHAMTON, N. Y.

Conference of Mayors and Other City Officials of the State of New York. Secretary, William P. Capes, 105 East Twenty-second Street, New York City.

JUNE 9-13.—WASHINGTON, D. C.

International Association of Chiefs of Police. Annual Convention. President, Major Richard Sylvester, Superintendent of Police, Washington, D. C.

JUNE 17-20.—OTTAWA, ONT.

American Society of Civil Engineers. Annual Convention. Secretary, Charles Warren Hunt, 220 West Fifty-seventh Street, New York City.

JUNE 18-20.—PORTLAND, ORE.

American Association of Nurserymen and Pacific Coast Nurserymen's Association. Joint Convention. Secretary, American Association of Nurserymen, John Hall, 204 Granite Building, Rochester, N. Y.

JUNE 23-26.—COOPERSTOWN, N. Y.

American Institute of Electrical Engineers. Annual Convention. Secretary, F. L. Hutchinson, 33 West Thirty-ninth Street, New York City.

JUNE 23-27.—MINNEAPOLIS, MINN.

American Water Works Association. Annual Convention. Secretary, J. M. Diven, 47 State Street, Troy, N. Y.

JUNE 23-28.—LONDON, ENGLAND.

International Roads Congress. Secretary, W. Rees Jeffreys, Queen Anne's Chambers, Broadway, Westminster, London, S. W., England.

JUNE 24-26.—SPRINGFIELD, ILL.

American Association of Officials of Charities and Correction. Secretary, W. T. Cross, Columbia, Mo.

JUNE 24-28.—ATLANTIC CITY, N. J.

American Society for Testing Materials. Annual Meeting. Secretary, Edgar Marburg, University of Pennsylvania, Philadelphia, Pa.

JULY 5-12.—SEATTLE, WASH.

National Conference of Charities and Correction. Secretary, Alexander Johnson, Angola, Ind.

JULY 17-19.—BUFFALO, N. Y.

American Society of Heating and Ventilating Engineers. Summer Meeting. Secretary, E. A. Scott, 29 West Thirty-ninth Street, New York City.

AUGUST 4-5.—LONDON, ENGLAND.

English-Speaking Conference on Infant Mortality. Under auspices of the British National Association for the Prevention of Infant Mortality and for the Welfare of Infancy. Secretary, American Committee, Dr. Philip Van Ingen, 125 East Seventy-first Street, New York City.

AUGUST 7-8.—MILWAUKEE, WIS.

United States League of Local Building and Loan Associations. Annual Convention. Secretary, H. F. Cellarius, Cincinnati, Ohio.

AUGUST 19-22.—WATERTOWN, N. Y.

International Association of Municipal Electricians. Annual Convention. Secretary, Clarence R. George, City Electrician, Houston, Tex.

AUGUST 25-30.—BUFFALO, N. Y.

Fourth International Congress on School Hygiene. Secretary-General, Dr. Thomas A. Storey, Convent Avenue and 139th Street, New York City; Local Representative, Dr. Francis E. Fronczak, Health Commissioner, Buffalo, N. Y.

AUGUST 26-28.—CEDAR POINT, OHIO.

The Central States Water Works Association. Annual Meeting. Secretary, R. P. Bricker, Shelby, Ohio.

SUMMER, 1913.—GHENT, BELGIUM.

First International Congress on Art of Town Planning and Organization of Municipal Life. General Secretary, Paul Saintenoy, Brussels, Belgium.

SEPTEMBER-OCTOBER.—KNOXVILLE, TENN.

National Conservation Exposition.

SEPTEMBER 1-6.—NEW YORK CITY.

International Association of Fire Engineers. Annual Convention. Secretary, James McFall, Roanoke, Va.

SEPTEMBER 8-13.—THE HAGUE, HOLLAND.

International Congress on Housing. Executive Secretary, Section for United States, Dr. William H. Tolman, 29 West Thirty-ninth Street, New York City.

SEPTEMBER 9-13.—COLORADO SPRINGS, COL.

American Public Health Association. Annual Meeting. Secretary, Selskar M. Gunn, 755 Boylston Street, Boston, Mass.

OCTOBER 7-10.—WILMINGTON, DEL.

American Society of Municipal Improvements. Annual Meeting. Secretary, A. Prescott Folwell, 50 Union Square, New York City.

OCTOBER 11-16.—INDIANAPOLIS, IND.

American Prison Association. Secretary, Joseph P. Byers, Trenton, N. J.



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“Herbicide” The Original and Old Reliable **Weed Exterminator**

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Municipal and Civic Publications

A "Selected List of Municipal and Civic Books," published last month by the American City Bureau, will be mailed to any subscriber for THE AMERICAN CITY on application. The list contains brief descriptions of 345 books, classified under 38 subject headings.

Above the items giving descriptions of new books in this and subsequent issues of THE AMERICAN CITY will be found numerals which correspond to the numbers of the subject headings in the catalogue. These numerals are inserted for the convenience of subscribers who may wish to adopt this means of keeping the selected list constantly up to date.

24

WYER, SAMUEL S., M. E., Consulting Engineer, Columbus, Ohio.

Regulation, Valuation and Depreciation of Public Utilities. 1913. 313 pp. 47 illustrations. 15 reference tables. \$5.00

A brief, concise treatment of the economic, engineering and legal facts regarding the relations between the public and public utilities. Numerous quotations from expert opinions and judicial decisions are made, and their sources are shown by references to the select bibliography in chapter 16. The other chapter heads are as follows: The Public and the Public Utility; Fundamental Definitions; Economics of Utility Problems; Governmental Power to Regulate Utilities; Protection of Utilities from Adverse Regulation; Requirements of Regulations; Relief from Oppressive Regulation; Depreciation; Electrolysis as a Form of Depreciation; Legal Status of Electrolysis; Valuation; Going Value, and Going Concern Value of Utilities; Principles Governing Cost of Utility Service; Engineering Data Pertaining to Utility Regulation, Valuation and Depreciation Problems; Reference Data.

7

MONTGOMERY, ROBERT H., C. P. A.

Auditing: Theory and Practice. 1912. xxix + 657 pp. \$5.00

This book is intended to instruct those who have had but little experience in accounting matters, as well as to guide the qualified public accountant. The chapters cover the auditor's qualifications, his duties in various cases, his methods of work in full; a study of depreciation; special points in different classes of audits, including building and loan associations, public service corporations, municipal accounts, charitable organizations, land and development companies, contractors, etc.; the liabilities of auditors and of directors; and certified public accountant laws and examinations, with specimen examination questions from various states.

27

RICHARDSON, CLIFFORD, Consulting Engineer.

Asphalt Construction for Pavements and Highways. 1913. ix + 155 pp. 11-illustrated. \$2.00

A pocket-book of reference for engineers, contractors and inspectors. The instructions given are based on the writer's experiences and observations through many years, and include a statement of the procedure to be followed to secure a sheet asphalt surface that will resist the most trying conditions. Heavy travel and continued moisture made such construction a difficult problem in London, when the author undertook, in 1894, to supervise the introduction there of the American type of sheet asphalt pavement, but the essential principles of successful methods were determined and pavements laid in accordance with these principles are said to have given entire satisfaction. This handbook makes the information available in convenient, direct and simple form for engineers and contractors of limited experience.

5

TYRRELL, HENRY GRATTAN, C. E.

Artistic Bridge Design. (With an Introduction by Thomas Hastings, of Carrère & Hastings, architects.) 1912. xvi + 294 pp. 242 illustrations. \$3.00

The artistic element of bridge design is emphasized in this book, together with the need of cooperation between engineers and architects in the construction of bridges, which are conspicuous and interesting features of the landscape. The basis of the volume is a series of articles by the author on ornamental bridge construction, published in *The American Architect* in 1901. The illustrations, with their descriptions, are a valuable part of the book. The subject matter is given under the following heads: Importance of Bridges; Reasons for Art in Bridges; Standards of Art in Bridges; Causes for Lack of Art; Special Features of Bridges; Principles of Design; Ordinary Steel Structures; Cantilever Bridges; Metal Arches; Suspension Bridges; Masonry Bridges. The author states the requirements for beauty and gives examples of the application and of the lack of these requirements. The use of the arch is recommended in artistic treatment. Pier and abutment design are discussed, and attention is given to viaducts and to small bridges, as well as to larger structures. The book is not merely critical, it is constructive.

31

THE WOMEN'S MUNICIPAL LEAGUE OF BOSTON.

Handbook of Opportunities for Vocational Training in Boston. (Compiled by Committee on Opportunities for Vocational Training. Edited by Thomas C. McCracken, A. M. Foreword by David Snedden, Ph. D., Commissioner of Education for Massachusetts.) 1913. ix + 301 pp. Maps and chart. \$1.25

Vocational guidance is an important aid in efficient citizenship. This book shows the opportunities for vocational training which now exist in Boston. An alphabetical list of subjects taught in the vocational schools and classes of Boston is first given, including the names of the schools in which each subject is taught, the age and sex of the students and the time of the sessions. Then follows a section which classifies the schools as professional, commercial, industrial, and for training in the household arts, and gives definite information as to purpose, courses, terms of admission, tuition, season and placements in regard to each school. Part III deals with the following topics: Organized Opportunities for Training for the Physically Handicapped in Massachusetts; Opportunities for Training in Settlements and Other Social Centers in Boston; Organized Opportunities for Finding Employment; Homes for Students in Associations or Clubs. Classified and alphabetical indexes of schools and classes are given, and a brief list of addresses of schools of college grade. The four maps show the location of the four different classes of schools. The methods by which this book is prepared should be of great service in similar compilations in other places.

One Man Can Build a House

—but several working together can build it more quickly and cheaply.

It Is Much the Same with a Town

¶ A few men with civic ideals can do much to make their community a healthier, happier and more prosperous place in which to live and do business

—but several hundred men banded together in a chamber of commerce or civic league can do much more.

Both Men and Money Are Essential

¶ THE AMERICAN CITY BUREAU is an association of experienced men prepared to provide plans for commercial and civic organizations; to build up memberships; to increase finances; and to help in securing the maximum community advance by means of efficient cooperation.

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The American City Bureau

95 Nassau Street, New York

16

GREENING, CHARLES E., Director of the Greening Landscape Company, Monroe, Mich.
The Greening Pictorial System of Landscape Gardening. 1910. Quarto. 166 pp. Many illustrations. \$5.00

A story of civic and home beautification told in charming tinted pictures. The book is intended for amateur gardeners as well as for landscape architects. The first part presents in friendly fashion the elements of landscape gardening as carried out by the author, with much detailed information as to trees, shrubs, vines, roses and other plants—where, when and how to plant them and care for them. Chatty little descriptions accompany the views in the pictorial section, calling attention to the trees, shrubs and plants used in each picture, and indicating special beauties or faults of construction. Valuable descriptive lists of trees and other growing things are given.

10

MEIER, W. H. D., A. M., Head of the Department of Biology and School Gardening, State Normal School, Framingham, Mass.

School and Home Gardens. 1913. v + 319 pp. Many illustrations. 80 cents

One of the most satisfactory books on the subject thus far published, because of its definite dealing with individual plants, one at a time, telling how to plan for, plant and care for each one. It is equally useful as a textbook for grammar grades and as a guide for home gardeners. The drawings and photographs have all been made expressly for this book. Plans are given for laying out and planting home and school grounds and gardens.

10

CLUTE, WILLARD NELSON, Teacher of Science, Flower Technical High School for Girls, Chicago, Ill.

Agronomy. A Course in Practical Gardening for High Schools. 1913. xi + 296 pp. Many illustrations. \$1.10

This book begins with chapters on chemistry, the origin and composition of soils, manures, and the effects of heat, light and moisture on the plant. These are followed by a comprehensive discussion of planting, cultivating, pruning, propagating, lawn making, plant breeding, evolution, and the origin of domestic races of plants. Insect pests and plant diseases are discussed and methods of control are given. Much space is devoted to the improvement of the home grounds, both as regards the growing of better vegetables and the production of finer flowers and more tasteful lawns and borders. The work centers in the school garden and is planned to cover the second semester of the school year, following closely the sequence of the seasons. This is also a gardening manual for the general reader, since it covers the whole subject of gardening and requires no previous knowledge for its comprehension.

5

MCVEY, FRANK L., President of the University of North Dakota.

The Making of a Town. 1913. 221 pp. \$1.09

This is the book of the small town—its difficulties and some ways to overcome them. Two chapters bearing the titles "Town Building and Cooperation" and "The Planning of the Town" are followed by four chapters on the fundamentals of health, schools, morals and business. The remaining chapters discuss "The Entrance to the Town," "Government and Administration," "Organizations and What They Can Do for the Town," "Advertising the Town," and "The Future of the Town." References for further reading on each of these topics are listed at the end of the volume. The book should be eagerly and gratefully received because its message is direct and practical. It tells definitely "what to do and how to do it."

30

WARD, EDWARD J., Adviser in Civic and Social Center Development, University Extension Division, University of Wisconsin, Editor.

The Social Center. (National Municipal League Series.) 1913. xi + 359 pp. \$1.61

Mr. Ward believes that the social center is "the fundamentally and supremely essential institution of our government," and that the ballot box should be placed in the school house. Some of the suggestive chapter heads of this volume are: Beginnings in Rochester and Elsewhere; the Public Lecture Center; the Branch Public Library; the Public Art Gallery; the Music Center; the Festival Center; the Motion Picture Theater; the Recreation Center; the Vocation Center and Employment Bureau; the Public Health Office; the Social Center in the Rural Community; the Social Center and the University; the Magnified School. The appendix contains a suggested constitution for a neighborhood civic club, and a bibliography on social centers.

31

BOYD, JAMES HARRINGTON, A. M., ex-Chairman of the Ohio Employers' Liability Commission and member of the Toledo Bar.

Workmen's Compensation and Industrial Insurance Under Modern Conditions.

1913. 2 vols. xxx + 1,622 pp. \$9.00

This is the first complete presentation of this most important subject. The author has studied it for some twenty years, during which he spent two years in Europe studying systems of workmen's compensation and insurance where they originated. He distinguishes between the laws for the relief of injured workmen and shows the economic effects of the operation of such laws from the ethical, social and political points of view. The historical evolution of these laws is traced, their constituent elements are analyzed and their fundamental legal principles explained. The methods of procedure and administration by which these laws operate in our country are completely set forth. The book is especially offered to students of industrial economics and to members of the bar to whom the task of interpreting and administering these laws is largely given.

27

RAVENEL, SAMUEL W., C. E.

Ravenel's Road Primer for School Children.

1912. 159 pp. 65 illustrations. \$1.06

Compiled and prepared at the request of the National Chairman, "Good Roads for Child Welfare Department," National Congress of Mothers. Presenting the elementary principles and practices of road-making, the causes and effects of good roads, their location, grades, drainage, maps and profiles, construction and maintenance, the effects of narrow and wide tires, and some kinds of roads and machinery necessary for the use of road builders.

32

GUITEAU, WILLIAM BACKUS, Ph. D., Superintendent of Schools, Toledo, Ohio.

Preparing for Citizenship. 1913. xii + 238 + xli pp. Illustrated. 75 cents

An elementary textbook in civics. Its three divisions are headed: "Government and the Citizen"; "State and Local Governments"; "The National Government." The appendices give the Constitution of the United States; the area, population and electoral votes of the states, 1912; the area and population of territories and insular possessions; lists of concrete illustrative material, such as maps, town warrants, ballots, legislative bills, etc.; and an excellent list of books for both pupils and teachers on many phases and elements of government and citizenship.

300,000,000 WIRE-CUT-LUG BLOCKS



No. 3074. Buffalo-Glenwood Road. 21 miles long. New York State Highway. Constructed June, 1911. Photo June 8, 1912, at Station No. 369 13 miles from Buffalo City Line.

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| | | Sterling Brick Co. | Olean, N.Y. |
| | | Reynoldsville Brick & Tile Co., | Reynoldsville, Pa. |
| | | Danville Brick Co..... | Danville, Ill. |
| | | Paterson Clay Products Co..... | Clearfield, Pa. |
| During 1912 | { | Wabash Clay Co..... | Veedersburg, Ind. |
| | | Clinton Paving Brick Co..... | Clinton, Ind. |
| | | Alton Brick Co..... | Alton, Ill. |
| | | Deckman-Duty Brick Co..... | Cleveland, Ohio |
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| | | Foster Paving Block Co..... | Bradford, Pa. |
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| | | Bessemer Limestone Co..... | Youngstown, Ohio |
| | | Murphysboro Paving Brick Co., | Murphysboro, Ill. |
| | | Binghamton Paving Block Co., | Binghamton, N. Y. |
| | | Peebles Paving Brick Co..... | Portsmouth, O. |

The combined output of these companies is 300 million blocks annually, or enough to pave a sixteen foot roadway 750 miles long. Hundreds of cities already have admitted Wire-Cut-Lug Block in their specifications and the number of city engineers recognizing their merit is growing. See that your specifications are right. Wire-Cut-Lug Block never have been rejected where submitted. *Write us for further evidence.*

THE DUNN WIRE-CUT-LUG BRICK CO. CONNEAUT, OHIO

PATENTED IN THE UNITED STATES AND FOREIGN COUNTRIES.

NEWS *from the* MANUFACTURERS

METHODS
MATERIALS &
APPLIANCES

The Hydro-Chronograph for Municipal Water Works and Pumping Stations

To municipal engineers generally, but particularly to those whose departments are operating pump houses several miles away from reservoirs and who have sewage disposal plants under their supervision, this comparatively new instrument is of interest.

It was not many years ago that the idea of using an automatic instrument to register water level to show the amount of water a city was using or wasting would have caused ridicule, if, indeed, it had attracted any attention at all. To-day there is hardly a municipal or private plant in the country which does not consider the value of some sort of tabulation, even if it be only to the extent of sending a man out once a day or oftener to read bench

and thus save a very large percentage of the cost of pumping water through the overflow pipe. The saving of unnecessary waste in the water supply itself would alone pay for the device in a short time.

Another use of the Chronograph which tends to great economy is in pumping water to a filtration bed, as in the case of the Delaware River at Philadelphia. The river water is often exceedingly muddy; on such days an unnecessary amount of this water pumped through the sand at the filter plant would tend to lay a coating of mud over the sand and thus necessitate the earlier renewing of the sand and general cleaning of the beds. In cases where the pumping plant is at some distance it is practical to have one of these instruments in the pump house, so that the engineer can maintain a safe level at the plant, and to have a repeating instrument in the office of the head of the department, which would keep that official in constant touch with the conditions at the plant.

Fig. 1 illustrates the appearance of this long-distance recorder, which is made in different types to register a variation of from 5 to 60 feet. Fig. 2 shows a different type of the same instrument which is found exceedingly valuable in tabulating sewage flows, precipitation tanks, etc., and, in fact, for any registration where the fluctuation is within small limits and where great accuracy is desired. Carrying, as this weir gauge does, an unusually large card, it will register without any reduction through a maximum variation of 2 feet, or on a two-to-one reduction a maximum of 4 feet, enabling one to read the record to within 1/20th inch.

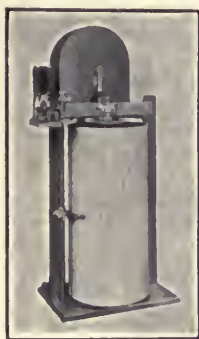


FIG. 1



FIG. 2

marks and make some sort of entry of the water conditions. On the principle that if anything is worth doing at all it is worth doing well, the Hydro Manufacturing Company, of Philadelphia, has put out its Hydro-Chronograph, an instrument admirably designed for this purpose and already in use in cities in various parts of the country.

The usefulness of this device has in the last half-year been greatly increased by the application of the principle of electric telegraphy to the instrument. This makes it practicable to place the Hydro-Chronograph in a pump house, thus not only giving the head of the department an indelible daily record of the conditions at the reservoir or filtration plant, but enabling the engineer on duty to regulate his pumping to meet the hourly requirements

✦ ✦

Valves and Hydrants

The new catalogue and price list of the Chapman Valve Manufacturing Company covers their product of valves, fire hydrants, sluice gates, shear gates, indicator posts, floor stands, etc., for all pressures and in all sizes, and is fully illustrated. Special attention is called to the section on sluice gates. These gates are furnished as a standard, with a short projecting flange or spigot on the back of the gate frame, to give stiffness to the frame and assist in the location of the gate. This short spigot on the standard gate is not to be confused with the long one, which is designed for use in dams, etc. Flange, bell or spigot for

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The Permanent Pavement

Following will be found
a Directory of some of
the well-known Manu-
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Alton Brick Company

Repressed Block and Dunn Wire-Cut-Lug Block
ALTON, ILL.



Bessemer Limestone Company YOUNGSTOWN, OHIO

Repressed Bessemer Block and
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BINGHAMTON PAVING BLOCK CO.

BINGHAMTON, N. Y.

MANUFACTURERS OF THE FOSTER BLOCK

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THE CLEVELAND BRICK AND CLAY CO.

Office: Engineer's Building
CLEVELAND, O.



CLINTON PAVING BRICK COMPANY :: Clinton, Indiana

are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire Cut Lug Block which is the acme of perfection for street paving material. Write us for samples and prices.

CLINTON PAVING BRICK COMPANY :: Clinton, Indiana

building into masonry or calking into a pipe line will be furnished if desired. The construction is said to be of the best materials. The seating surfaces of the gates are made of bronze, finished to form a watertight joint when the gate is closed. The surfaces of the bronze rings forming these seats are raised high enough above the cast-iron frame and plug to prevent the blisters which may possibly form on the iron, after long submersion of the gate, from rising high enough to score the bronze on the opening of the gate, and thus destroy the efficiency of the water joint. The design of the adjusting wedges is such that they can be changed to take up all wear in a few minutes by the use of an ordinary wrench, no special tools being required. The Chapman gates may be operated by hand, by hydraulic cylinder or by electric motor.

✦ ✦

"The Wheel Within a Wheel"

This is the title of a booklet in which the Sewell Cushion Wheel Company, of Detroit, Mich., gives an idea of the utility of its product. The cost of traction upkeep is a serious item in the use of the commercial motor car. To get the maximum speed and keep the tire cost down is the object for which the Sewell cushion wheel was invented. It claims the advantage of a solid tire tread, eliminating punctures, costly outer-casings and the other contingent expense, while, with the rubber roll or cushion between the inner and the outer wheel, it is said to give the resilient effect of the pneumatic tire and its possibility of speed without heavy expense. The makers claim that one set of these wheels will last the life of an ordinary car, and, with the resiliency, will greatly increase the mileage of solid tires. This booklet gives illustrations of the construction of the wheel and of its appearance in normal condition and in action, also of a number of cars in various places which have used these wheels for different kinds of traffic.

Help in Securing Water Supply

An aid in solving the problem of water supply is offered in the 38-page Catalogue No. 12 of the Standard Pump & Engine Company, of Cleveland. Its title is "Standard Pumping Engines and Standard Water Supply Systems." It shows designs adapted to shallow wells, cisterns, lakes or rivers, and others adapted to pumping from deep wells, the various types being operated with gas or gasoline engines, electric motor or hand power. This company manufactures the pumping units illustrated in the pamphlet, and also supplies purchasers with complete installations of the pumping units of whatever size and type required, tanks of the dimensions needed, and cylinders, drop pipe, sucker rods, and such other attachments as are necessary to make the outfit ready for installation, together with full instructions as to its operation and care. The catalogue includes a number of drawings showing different types of installation, and contains also a number of tables useful in studies of water supply.

✦ ✦

A New Book of Reference on Motor Trucks

The B. F. Goodrich Company, Akron, Ohio, has published an attractive handbook of about 70 pages, containing a fund of information for business houses which are considering the purchase of motor trucks for their delivery work. It contains half-tone cuts and the more important specifications for about sixty of the 1913 American-made models, both gasoline and electric. The book was compiled from data furnished by the manufacturers of trucks using solid tire equipment in the sizes in which Goodrich wireless motor truck tires are made. The information is concrete, condensed, and yet with sufficient detail to make it of value to many kinds of business in which truck service is needed. A copy will be sent on request.



FEDERAL MOTOR TRUCK WITH GOODRICH TIRES, USED IN LINCOLN PARK, CHICAGO

THE DANVILLE BRICK COMPANY

Danville Repressed & Dunn's Wire-Cut-Lug Blocks
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"THE
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DECKMAN-DUTY BRICK CO.

Repressed and Dunn Wire-Cut-Lug
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Manufacturers
*Shale Paving Block and
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Large Capacity

Hocking Valley Brick Company HOCKING BLOCK

A High Class Shale Paver
PLANTS, Logan, Ohio GENERAL OFFICE, Columbus, Ohio
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MURPHYSBORO PAVING BRICK COMPANY

Equal to
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Repressed and Dunn Wire-Cut-Lug
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PROMPT DELIVERIES.

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116 West Eighth St.
CHATTANOOGA, TENN.

Annual Capacity:
Thirty Million Paving Blocks

A Set of Wagon Views

An interesting collection of some types of wagons manufactured by the A. Streich & Bro. Company, of Oshkosh, Wis., is shown in a 16-page catalogue issued by the company. There are ice trucks with solid top, with side and end doors; ice wagons with panel and



STREICH DUMP WAGON FOR PARK USE

straight tops; coal wagons with side dump chutes and plain body, and several different styles of dump wagons of especial interest to street cleaning and park departments.

✦ ✦

"Records of Efficiency"

The efficiency of the interior fire alarm service of the Gamewell Fire Alarm Telegraph Company of New York is given endorsement in an illustrated pamphlet with the above title. The importance of such service is attested in a statement of the fire waste of the country. The Gamewell system is described and many testimonials to its value are given.

✦ ✦

Safeguarding Public Records

The value of incombustible equipment for the protection of public documents is set forth in a catalogue of "Steel Filing Devices, Fixtures and Furniture for Public Buildings," published by the Art Metal Construction Company, of Jamestown, N. Y. A number of states, notably Massachusetts, Connecticut and Maine, have statutes requiring rooms where public records are kept to be fitted with incombustible material exclusively. This pamphlet presents partial views of complete metal-

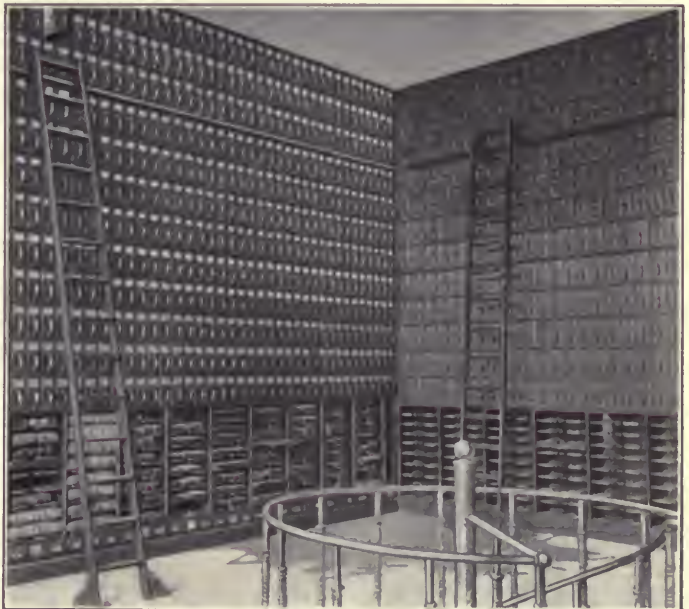
lic equipment in notable buildings in various cities, and states that forty-four state capitols, over 1,000 municipal buildings and court houses, besides government buildings at Washington, have been partially or completely equipped with the "Art Metal" product.

Fine steel plates, rolled especially for this purpose, are chiefly employed in the production. The moldings and trim are largely of brass or bronze, and the finishes of fine baked enamels, lacquers or electrotypes. The results claimed for the elimination of woodwork from filing rooms are greater safety, durability, convenience, attractiveness, economy of space and perfect sanitation.

✦ ✦

For Contractors' Supplies

It is announced that an office has been established by C. Wadsworth at 961 Woodward Avenue, Detroit, Mich., for the purpose of representing manufacturers of contractors' machinery and materials of construction, especially municipal equipment and supplies. Besides the sales representation, Mr. Wadsworth will be prepared to render such engineering service as may be necessary to insure proper installation and operation of the apparatus sold.



CITY CLERK'S VAULT, CITY HALL, MINNEAPOLIS, EQUIPPED WITH THE "ART METAL" PRODUCT

THE WABASH CLAY COMPANY
Wabash Repressed & Dunn's Wire-Cut-Lug Blocks
VEEDERSBURG, INDIANA

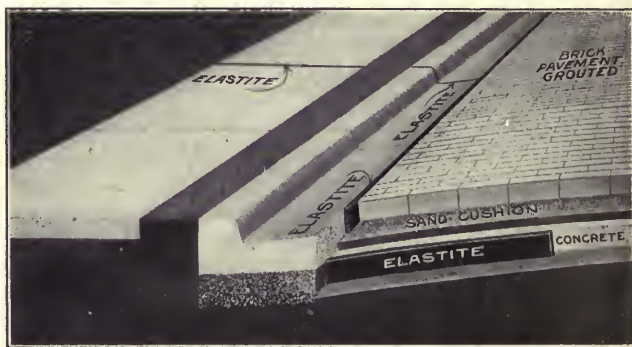
Wassall Brick Company
Wassall Shale Paving Block
Glouster, O.



**Quicker, Better
and More Eco-
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Quicker because the paving joint is just placed in position, *only one operation*.—**Better** because the job gives longer service—**More Economical** through saving of cost of labor.

These results are obtained with



CAREY ELASTITE PAVING JOINT

Delivered from factory ready to place in the street. No preparation or *equipment necessary* as with the poured joint.

Elastite's composition is always uniform and so always gives best results, even with *unskilled* labor. Supplied

in 5-foot lengths and in various widths and thicknesses to suit every condition.

Investigate—ask for a sample—let us show you streets where Elastite is in use. *Write today.*

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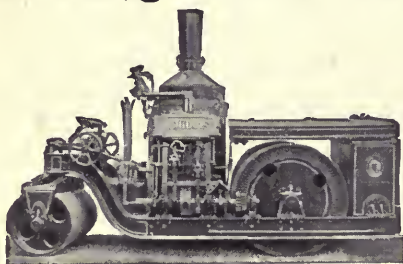
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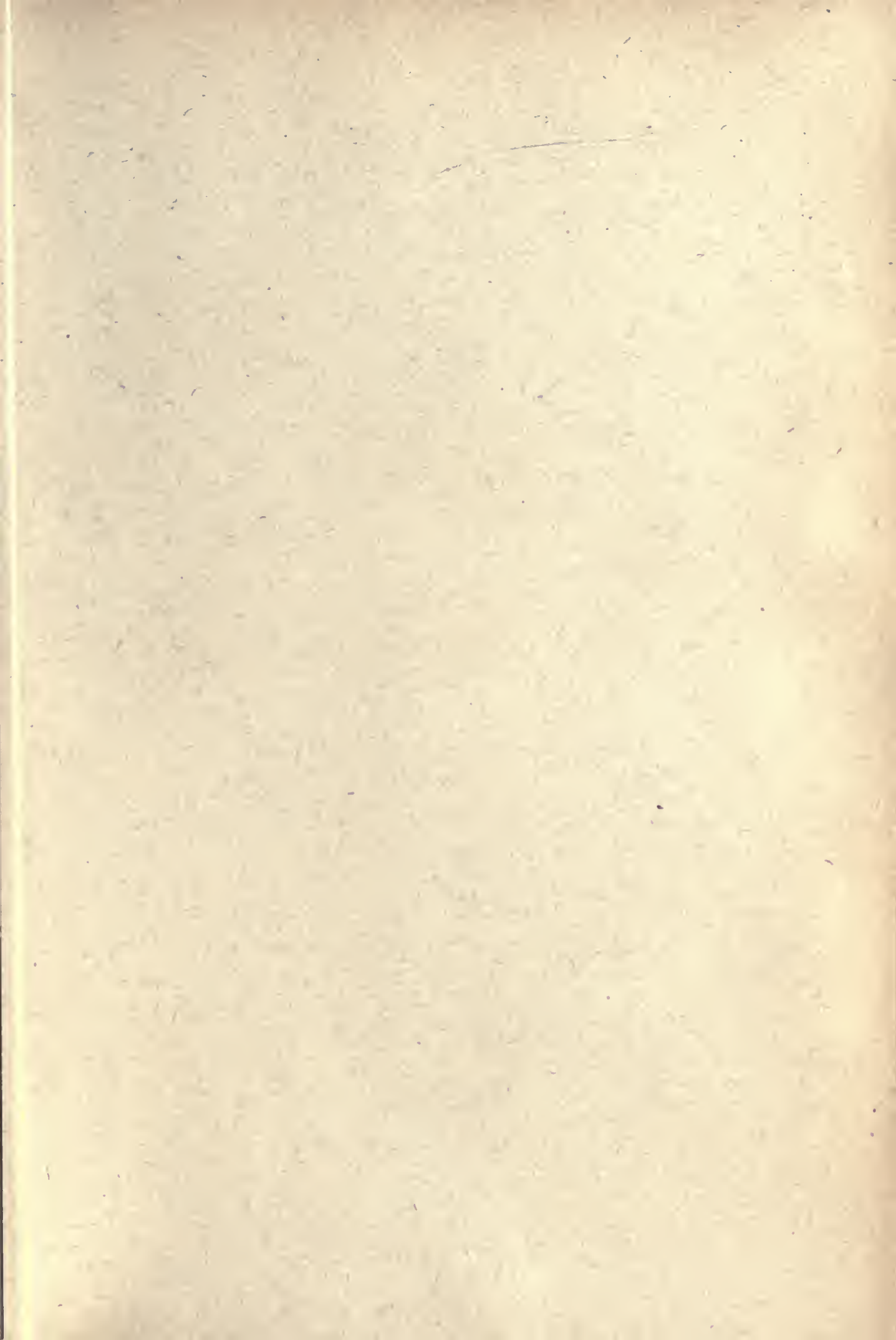
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